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ABSTRACT

This committee report provides a guide to the role of the Library of Congress in meeting the information needs of Members of Congress and an overview of the evolution of that role. Topics discussed include the impact on the Library of legislative moves to strengthen congressional information services, Library automation, information resources and services, computer-supported services, improved future services for Congress, and Library of Congress relationships to other legislative information activities. Appended are detailed data on the Library's organization and principal functions and its existing inventory of computer-oriented resources including personnel, equipment, software, and contracted services. (STS)

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94th Congress
2d Session

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LIBRARY OF CONGRESS INFORMATION RESOURCES AND SERVICES

FOR THE

U.S. HOUSE OF REPRESENTATIVES

A REPORT

PREPARED FOR THE

AD HOC SUBCOMMITTEE ON COMPUTERS

OF THE

COMMITTEE ON HOUSE ADMINISTRATION

BEST COPY AVAILABLE

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FOREWORD

Information is an essential commodity for Members of Congress. Sometimes, however, information we receive is incomplete or not available fast enough for use in making a decision. In other cases we may be inundated with too much data about a subject we know too little about.

Because the information explosion shows no signs of abating, Congress is turning more and more to computer technology to help us sort through the facts and figures that provide a guide for legislative action.

The Library of Congress, our major source of information, is in the forefront of this technological change.

This document provides a handy guide to the role the Library is playing in meeting the needs of Congress and the Nation in providing timely and useful information. I commend this report to my colleagues.

CHARLES ROSE,
Chairman, Ad Hoc Subcommittee on Computers.

LETTER OF TRANSMITTAL

The Library of Congress

Congressional Research Service

Washington, D.C. 20540

January 21, 1976

The Honorable
Charles Rose III, Chairman
Ad Hoc Subcommittee on Computers
Committee on House Administration
U.S. House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

I am pleased to transmit this report entitled "Library of Congress Information Resources and Services," prepared at the request of the Ad Hoc Subcommittee on Computers, Committee on House Administration, of the House of Representatives.

The study presents an overview of the evolution of information services by the Library of Congress, describing the variety of support provided to the Congress and the public at large. Particular attention has been given to setting forth a detailed description of those files and products of value to congressional users.

Featured in this narrative report are pertinent factual and statistical information which reflect the Library's fulfillment of its mission, philisophy of service to the Congress and the Nation, responsive actions to meet the changing information needs of its user clientele, and detailed data on its existing inventory of computer-oriented resources: personnel, equipment, software, and contracted services.

Preparation of the report was coordinated by two Congressional Research Service staff, Robert L. Chartrand and James R. Price. Assisting in the editing and writing were other CRS personnel: Jean Paul Emard, Gary Lee Evans, and John Kaldahl. William R. Nugent, the Library's assistant director for information systems development, was responsible for much of the material on computer-related activities. Library departments were responsible for the preparation of those sections describing their activities.

May I express my appreciation for the opportunity to undertake this worthwhile and timely assignment.

Sincerely,

Norman Leckman
Acting Director

Written and compiled by CRS Task Force: Robert L. Chartrand, James R. Price, and Jean Paul Emard, Gary Lee Evans, and John Kaldahl.
Manuscript preparation by: Sharon Green, Margaret Rice, Leslie Roper, Georgia Joyner, Mary Radtke.
Departmental Directors responsible for sections describing their activities.

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I. THE LIBRARY OF CONGRESS—THE INSTITUTION

Founding and Early History

The Library of Congress—repository of the legislature's working tools, recorder of the national chronology, and treasure-house and transmitter of the Nation's cultural heritage—had its origins along with Congress itself. Its birth as a formal institution coincided with the establishment of Washington, D.C., as a permanent national capital in the spring of 1800, and its evolution since that time has mirrored the rapid growth of Federal executive power, the unparalleled expansion of national economic, political, and cultural activity, and the efforts of the Congress to review, oversee, and stimulate the development of the United States as a great Nation.

The need for research tools and reference services for the legislature was clearly established at the first convention of the Continental Congress in 1774, when the delegates arranged for borrowing privileges from the Library Company of Philadelphia. After the Revolution, similar arrangements were made for the new National Legislature assembled in New York and, despite a congressional committee recommendation in 1789 that a small sum be appropriated to establish a basic reference library for the new Congress, the delegates continued to rely upon nongovernmental sources for library support for nearly twenty years. In 1794, some funds were appropriated to begin a small in-house reference collection, and in 1800 President John Adams signed the bill which established the District of Columbia as the permanent national capital. One section of this bill created the Library of Congress by appropriating $5000 for the purchase of books and arranging for their care and storage. This same bill established a Joint Committee on the Library to assist in the selection of the volumes and the provision of rules for access to them.

Evolution of Dual Role: Service to Congress, "National Library" Concept

During these early years there was little confusion as to the purpose for which a library was needed. The Congress required adequate reference works to enable its Members to discharge their duties without having to transport personal collections to the capital or resort to ad hoc arrangements with private sources. As early as 1802, however, Thomas Jefferson, in recommending volumes to be purchased, made clear his view that the library should be a collection of the Nation's chronology as well as a reference tool for the Congress. The purchase in 1815 of the library of Thomas Jefferson changed the nature of the library from a parliamentary one to one that was universal in scope. The Library of Congress remained, however, essentially a legislative library until the appointment in 1864 of Ainsworth Rand Spofford as Librarian—a post he held for thirty-three years.

During Spofford's stewardship, the Library grew from two rooms, a staff of seven, and 80,000 books to 108 positions to staff the new building (the present Main Building of the Library) and to manage its collections of more than 740,000 volumes of books, periodicals, maps, etchings, engravings, pieces of music, and photographs. Mr. Spofford had, through copyright deposits, international exchange, the acquisition of the Smithsonian scientific library, and astute purchases of entire collections, effectively implemented his own concept of building a national library, not just a library for the use of Congress. As his efforts bore fruit and with the occupancy of the new Library building in 1897, the Library's emphasis broadened from its legislative support function to one of serving the library community, scholars, and the general public.

This trend was not seriously questioned until 1911, when a number of new Representatives and Senators, previously accustomed to significant support from their own state legislative reference services, began a series of moves to provide the Congress with similar support at the national level. These moves resulted in appropriations being made in the fiscal year 1915 budget specifically to enable the Librarian of Congress to employ competent persons to prepare such indexes, digests, and other compilations of law as may be required for Congress and other official use.

During the first half of the twentieth century the Library continued to develop, fulfilling a duel role of national library as well as Library of Congress, and serving three external groups: Congress, the library profession, and the scholarly research world. Today, LC's literary, artistic, and technical collections have become the richest in the western world, and the Library is looked to by the library profession as the pace-setter for standards in bibliography and technical services. The Library staff includes experts of national and international stature in virtually all of the learned professions.

Emphasis on Comprehensive Holdings, Access to Users, Development of Broad-range, Responsive Service

The Legislative Reference Service became a separate department of the Library in 1946 as a result of the first Legislative Reorganization Act. The Legislative Reorganization Act of 1970 broadened its scope and renamed it the Congressional Research Service. The Act provided explicit statutory authority for the Director, an independent budget for the Service, and a mandate that the Librarian facilitate to the utmost accomplishment of the Service's mission to provide independent and non-partisan research and information support for the Congress.

As of the end of FY 1974, the Library's collections included more than 16 million books, 31 million manuscripts, a quarter of a million phonograph records, more than two hundred thousand reels of motion pictures, and endless cases of maps, photographs, volumes in Braille, rolls of microfilm, papyri, magnetic tape, and every other form of preserved thought. The Library's staff of more than 4,000 occupies two large buildings, and will occupy a third building before the end of the decade; it occupies rental office and storage space in 10 different locations within the Washington D.C. metropolitan area and in Day-

ton, Ohio. It provides leadership to the library community and reference assistance to countless scholars, and answers more than 250,000 requests for information and research assistance from the Congress annually. Its staff utilizes almost every conceivable device available for the location, recording, and transfer of information, including the most modern and complex electromechanical equipment, photoduplicaing equipment, computers and related hardware, and the newest devices for the processing and manipulation of words.

In short, the Library is serving effectively in both its roles as the national library and the library of the Congress. Congress has made explicit its will that the Library of Congress will further expand and improve its efforts to collect, sort, and evaluate the avalanche of facts, figures, and interest-oriented materials that flood the very real world in which Congress lives.

II. IMPACT ON LIBRARY OF LEGISLATIVE MOVES TO STRENGTHEN CONGRESSIONAL INFORMATION RESOURCES

Need for Congressional Information Services

Throughout the history of the Congress, there is ample evidence of Members' needs for information—narrative, statistical, and interpretive—but until the 1904's, the variety and quantity were limited. With the advent of the Depression and World War II, a significant increase in the tasks undertaken by the Federal Government, and a population of growing proportions and mobility, the Congress became aware that existing information resources and services would not suffice. In the words of Representative Wright Patman, the modern Congress must deal with:

> A tremendous volume of complicated economic and social questions, the solution of which often involves technical research and access to qualified and unbiased sources of inofrmation.

Since the Congressional Research Service—at that time named the Legislative Reference Service—was the recognized non-partisan legislative information resource, it was only natural that the Library of Congress paid careful attention to testimony before the Joint Commitee on the Organization of Congress in 1965–1966. Diverse groups within the public and private sectors were calling for new or expanded information services, many of which involved the use of computer or microform technology. The Library management had already established an Information Systems Office capable of providing analytical and automatic data processing (ADP) support, and an internal Committee on Automation representative of the six LC departments which would establish policy, undertake planning strategies, and evaluate on-going operations had been created. The Library had used electronic equipment since the late 1940's for its internal fiscal matters.

Response by CRS to Information Needs

Within the Congressional Research Service, the position of Specialist in Information Sciences was established, with the dual function of helping develop improved in-house systems and provide professional advice to the congressional elements exploring the utility of information technology. These latter services took several forms:

Preparation of special studies, both tutorial and applications-oriented, which could make Members aware of the benefits and limitations of using computers.

Organization of seminars for Members and staff: several series on "Introduction to Information Retrieval" and others specifically treating a legislative activity area (e.g., "Fiscal-budgetary Information Support").

Providing technical assistance in several forms: participation in the Working Group of the House Special Subcommittee on Electrical and Mechanical Office Equipment, or in a consultant capacity, as with the Congressional Budget Office.

Responding in written form or through face-to-face sessions to congressional requests for substantive information or interpretive commentary.

CRS AUTOMATION IN EARLY YEARS

Even as the Library moved to upgrade its information response mechanisms and the Congressional Research Service was establishing its first computerized file (on pending legislation content and status), the perception of "information" as a critical force in legislative life was emerging. Several key questions enunciated by Dr. Charles R. Dechert in *Congress: The First Branch of Government* became points of focus for those in management and technical roles on Capitol Hill:

> The problem of congressional access to information might be better defined as a problem of information management. What specific elements of information are needed to make what judgments? Where are these elements located? How are they to be retrieved? And how should they be presented in order to be meaningful?

IDENTIFICATION OF "INFORMATION" CRITERIA

"Information"—its management, selection, handling, utility—came to enjoy an unprecedented priority in the thinking of many legislative persons. With limited funding and staff experience, some key criteria had to be developed to govern their allocation:

Importance of the service or product to the Member or committee.

Measurable improvement in performance of the given operation, with cost effectiveness a secondary consideration.

Redundancy of the expressed need for access to a certain file or printing of a specific item.

Urgency of a Member's or committee's need for subject data, with no apparent alternative for obtaining such information.

Number of congressional elements benefited by the new or expanded service.

Legislative Action To Increase Effectiveness of Congress

LEGISLATIVE REORGANIZATION ACT OF 1946

Commencing in 1945, the Congress began to take steps to improve its organization, procedures, and support services. As mentioned above, with the passage of the Legislative Reorganization Act of 1946 (Public Law 601 of the 79th Congress), the Library of Congress received authorization and direction to create a separate department to be known as the "Legislative Reference Service." As a prime information resource for the Congress, its staff would perform analysis of legislative proposals, prepare summaries and digests of public hearings before congressional committees, and upon request, or upon its own initiative in anticipation of requests, gather, classify, analyze, and make available in translations, indexes, digests, compilations, and

bulletins, and forms of information bearing upon legislation, and render such data serviceable to Congress, its committees and Members, without partisan bias in their selection or presentation.

LEGISLATIVE REORGANIZATION ACT OF 1970

From this formalization of the LRS (later CRS) role, and the creation of senior specialists, the Library's responsibility to the Congress was underscored. The scope and nature of research support continued to broaden during the next 25 years. Thus, when the Legislative Reorganization Act of 1970 was enacted as Public Law 91-510, the newly named Congressional Research Service—already generating a few ADP-supported files including a bibliographic data base designed to provide a "current awareness" service for the Congress—was in a position to respond to the demand that it conduct liaison with all committees, assist in the analysis and evaluation of legislative proposals including a determination of their probable results and alternative methods for accomplishing the stated goals, prepare legislative histories in connection with measures scheduled for hearings, keep track of expiring legislation, and advise each committee on subjects and policy areas which might be profitably analyzed in depth. These and other delineated tasks obviously would require more than a "reference-oriented entity," and a substantial staff expansion was initiated. It should be noted that while the provision for a Joint Committee on Data Processing was stricken from the final version of the second reorganization act, Members in both chambers were beginning to urge that study of the role of computer technology as an aid in legislative operations and constituent service be expedited.

HOUSE RESOLUTION 988

The House Select Committee on Committees was created in 1973 to study and develop recommendations on House committee organization, jurisdictions, and related activities (including information support). The goal: "to make the House and its committee more deliberative, responsive, and efficient." As sometimes occurs, a few key CRS staff were detailed to the Select Committee during its 18-month existence. At the request of Chairman Richard Bolling, CRS staff prepared a definitive study on "*The Congress and Information Technology*." In addition, assistance was provided by CRS in considering the utility of a "legislative classification system" and role options for a House Commission on Information and Facilities.

CONGRESSIONAL BUDGET AND IMPOUNDMENT CONTROL ACT OF 1974

Congressional access to and handling of fiscal-budgetary information long had been a matter of concern to Members and their staffs, and while the Legislative Reorganization Act of 1970 (in Title II) had set forth a working arrangement involving the Department of the Treasury, the Office of Management and Budget, and the General Accounting Office, many legislators felt that additional corrective action was required. In 1974, the Congressional Budget and Impoundment Control Act became law (P.L. 93-344), creating two Committees

on the Budget (House and Senate) and a Congressional Budget Office (CBO). Members of the CRS Economics Division quickly became involved in the work of these new entities, including the use of computerized econometric modeling services; also, a consultant from CRS was requested by CBO to advise on the development of information services.

Library Awareness of Congressional Information Requirements

The Congressional Research Service has by its very nature—in composition, legislative mandate, and traditions—stayed alert to congressional needs for information. As private sector proposals and studies concerning these needs proliferated during the late 1960's, CRS often was called upon to place these in an understandable context for Members and responsible committees. In some instances, corporations or individual information specialists were proposing changes which were valid but ill-timed; on other occasions, there was a mismatch between existing procedures and the projected overlay of tools and techniques. After Representative John Brademas prepared the resolution (in 1969) which caused the House Special Subcommittee on Electrical and Mechanical Office Equipment to take action in this area, it became imperative that the as yet generalized congressional information requirements be scrutinized and categorized. Using legislative personnel and selected academic consultants, a survey of House Members and staff resulted in a reaffirmation of priority needs:

Information on the status and contents of new legislation, including legislative histories.

Information about Federal grants, loans, projects, and contracts—programs in existence and status of individual applications by constituents.

Information on the scope and nature of Federal programs throughout the country.

Information for the evaluation of Federal programs, especially funding ramifications.

A later survey (in 1972) by the GAO focused on the kinds of information which Congress must have in its fiscal-budgetary role, with the results published in a "blue book" entitled "Budgetary and Fiscal Information Needs of the Congress."

Throughout these critical years, the CRS realigned and reinforced its research and support resources to be increasingly responsive to the Congress. By actually participating in many of these formative endeavors, as has been mentioned above, the CRS was able to develop its own better services and products, utilize the best that was available elsewhere (such as access to the MEDLINE service at the National Library of Medicine or the New York Times Information Bank), and advise Congressmen on how to define more precisely their requirements and needed products.

Creation of Legislative Information Development Organizations

Since 1970, the Congressional Research Service has been in a position to interact with, and provide a wide variety of support to, a number of congressional organizations with responsibilities for

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information systems development and operation. While some of these groups, particularly in the first few years, pursued courses of unilateral action, it soon became apparent that carefully thought out coordination and cooperation would be required. A brief notation on the arrangements effected between the Library of Congress/CRS and certain legislative information systems groups follows (with original date of support provided):

Senate Subcommittee on Computer Services.—Technical assistance by the CRS Specialist in Information Sciences in developing an approach for studying Senate applications and orienting staff personnel. (1970)

House Information Systems group.—CRS transferred to HIS the responsibility for committee legislative calendar support, equipment backup in the event of House ADP failure was arranged, and two-phased indexing of pending bills and resolution was undertaken. (1971)

Joint Committee on Congressional Operations.—Two studies were prepared by CRS for the Joint Committee: a consultant report on "*Congress and Mass Communications*" and a CRS staff document entitled "*Modern Information Technology in the State Legislatures.*" (1972)

Congressional Budget Office.—Technical assistance by CRS staff in utilization of computerized modeling services and consultative support in developing a computer-oriented information system both for the C.B.O. and other fiscal-budgetary elements within the legislative branch. (1975)

House Ad Hoc Subcommittee on Computers.—Technical assistance by CRS and Information Systems Office personnel in matters concerning computer and information systems support for the Congress. (1975)

Informal discussions also have taken place between CRS staff and the Senate Committee on Appropriations' Subcommittee on Computers, and upon request detailed information on CRS and Library services was sent to the newly formed House Commission on Information and Facilities.

Library of Congress Allocation of Resources to More Fully Support the Congress

Information Systems Office, Information Systems Group, Information Sciences Section

In the past decade, as already detailed, the Library of Congress moved apace with the congressional demand for more and better information. Through its Information Systems Office, the Library established a highly professional 80-man group capable of information systems analysis and design, sophisticated programming, and equipment support in several modes of operation. Task forces of ISO personnel were created to meet the special needs of various Library departments. Within the CRS, an Information Systems Group identifies new ADP-type applications, trains personnel in terminal unit operation, and provides "trouble-shooting" assistance for in-house and Hill customers. Research support remains vested in the Information Sciences Section of the Science Policy Research Division of CRS.

LIBRARY OF CONGRESS COMPUTER FACILITY

The Library of Congress computer facility has grown impressively since 1965. Today, twin 370/158 computers with elaborate teleprocessing capability are heavily utilized, while many of the more routine tasks are executed in "batch" mode. More than 300 terminal devices, within the Library and on Capitol Hill, allow user access to a variety of files and services. In order to exploit the computerized data in the Legislative Information Display System (LIDS), the Information Systems Office has written a user-oriented retrieval language called SCORPIO (Subject-Content Oriented Retriever for Processing Information On-line), which continues to be refined as new or better ways of providing access are evolved.

CONTRACTUAL SERVICES

It has been the CRS philosophy that some services must be performed with contract assistance, that is, it would be unwise to attempt to develop a breadth of staff and equipment which could solve all problems and service all customer needs. Therefore, there has been selective use of individual consultants and corporations and this has allowed a range of information offerings otherwise impossible. As noted elsewhere, the New York Times Information Bank offers a unique, much used service for congressional offices. By special arrangement with Federal executive branch groups, CRS has on-line entree to both the Justice Retrieval and Inquiry System (JURIS) and MEDLINE. Modeling services in the areas of economics and education have been contracted for by CRS divisions with support responsibilities necessitating such resources.

The heart of the CRS operation is, of course, its corps of specialists and analysts and the copious files available to them. The nature of the files chosen for computerization by CRS management is discussed in Section V, but after ten years of experience with ADP-centered data, it is important to point out that there now exists a heightened CRS staff awareness and acceptance of the value of such files—to themselves and their customers in Congress. And so, with an affirmative stance by Library management toward the development of improved information services, enhancement of staff performance in the selection and "packaging" of needed information, and a flexible, enlightened clientele, it is possible to foresee increased congressional reliance on such information resources as those maintained by the Library of Congress and a willingness on the part of the Members and committees to avail themselves of this important element in decisionmaking.

III. AUTOMATION AND THE LIBRARY OF CONGRESS

Early History of ADP Activities in the Library

LIBRARY OF CONGRESS MECHANIZATION COMMITTEE

The Library's first attempts to grapple with the rising phenomenon of automatic data processing began in late 1957. Since there had arisen both within the congressional milieu and the library community at large an interest in mechanization, an internal Mechanization Committee was established in 1958. This Committee surveyed and made note of those Library activities deemed most suitable for mechanization.

In 1959, three hardware companies involved in ADP offered their contractual services in performing exploratory examinations of the Library's operations. The firms concluded that due to the "extraordinarily complex and interrelated nature of the Library's operation . . . a systems approach" should be considered, but cautioned the Library to "proceed with care."

KING REPORT

By 1961, Librarian of Congress L. Quincy Mumford, with the advice of the Mechanization Committee, decided that the "most rewarding approach to mechanizing certain functions would be through the preparation of a long-range 'blueprint'." Using funds granted by the Council on Library Resources, an independent, seven-man study team headed by Dr. Gilbert King was engaged to conduct "a survey of the possibilities of automating the organization, storage, and retrieval of information in a large research library." Further assisted by an Advisory Committee made up of four distinguished librarians and the President of the Council on Library Resources, Verner W. Clapp, the King study team issued its findings in a report, *Automation and the Library of Congress*, in 1963.

This study, commonly known as the "King report," concluded that: "Automation can, within the next decade, augment and accelerate the services rendered by large research libraries and can have a profound effect upon their responsiveness to the needs of library users." Based upon the recommendations of the King report, the Library, placing an emphasis on an incremental approach to be pursued over the following ten years, implemented two distinct ADP-oriented applications:

The use of computer technology in meeting certain Library payrolls and personnel housekeeping matters; and

The development of a MAchine Readable Cataloging (MARC) format and system for a centralized bibliographic file.

(10)

UNITED AIRCRAFT CORPORATE SYSTEMS CENTER STUDY

During the same period, a study contract was issued to the United Aircraft Corporate Systems Center to perform a "system development study." The objective of this study was to ascertain "the most efficient configuration of operations (for the Library), not automation *per se*." In its 1967 report, this contractual group reflected on the large number of Library files, about 1,260 in all, and the size and complexity of the central catalogs which must be considered as Library management determines the value of centralization and automation.

LIBRARY OF CONGRESS COMMITTEE ON AUTOMATION

Showing continued concern for automation within the Library, a new Committee on Automation, made up of representatives from each of the Library's departments, was created to supersede the Mechanization Committee. Among its high priority agenda items were: ADP budgetary matters, ADP orientation for the Librarian, and oversight of the newly formed Information Systems Office (ISO).

Establishment of the Information Systems Office (ISO)

HISTORY

The Library found itself nearing the end of the 1960's with two possible options for automating selected activities. First, the Library could seek outside contractual help. Or secondly, a strong in-house ADP unit could be established. In the light of the past difficulties contract firms had experienced in coping with the related problems of file proportions, flexibility, and utilization, the second alternative was selected. The Information Systems Office (ISO) was established in 1964, with the responsibility within the Library for planning, developing, and implementing systems utilizing computer and microform technology.

RESPONSIBILITIES

Among its numerous services to the departments of the Library, ISO possesses capabilities in systems analysis, programming, hardware evaluation and installation, and batch and on-line computer services. These services have not, however, been limited to intra-Library support. Through close cooperation with the Congressional Research Service, both ISO and CRS have assumed a major responsibility in bringing about computerization of selected services for the Congress.

History of Automated Services for the Congress

CRS AND AUTOMATED SERVICES

To be able to aid Congress in identifying, analyzing, and implementing applications of ADP, the Legislative Reference Service in 1966 began to develop its own capabilities in information science and technology. Through memoranda, multilithed reports, seminars, and consultations, the objectives and results enumerated in Section II of this report were achieved.

LIST OF CRS SERVICE CRITERIA

As the mission of CRS expanded and took on new directions with the passage of the Legislative Reorganization Act of 1970, Director Lester S. Jayson stressed the application of several "service criteria" to the CRS working processes: utilization of service; timeliness of service; accessibility of service; diversity of service; anticipatory service; confidentiality of service; and quality of service. Due to the ever-increasing and more complex workload within CRS, every means was utilized to meet the demands of fulfilling the forementioned criteria and the development of a "work smart" staff. (Appendix H shows CRS workload and staffing trends.)

One such method used to aid the CRS staff was the implementation of computer technology. As the Director pointed out: "On the basis of careful assessment of the costs in equipment and staff time and benefits of speed, space-saving and data sorting for each projected application, the Service has made substantial progress since 1966 in implementing effective automated systems."

JOINT ISO-CRS VENTURES

Besides continuing its efforts to aid Congress through such projects as automated calendar preparation, a "current awareness" notification service, and a computerized *Legislative Status Report*, CRS explored other ADP applications. Of major importance was the development by the Library's Information Systems Office of the Subject-Content Oriented Retriever for Processing Information On-line or SCORPIO. The SCORPIO system allows direct access to pertinent information from any of the following computerized data bases:

Legislative Information Data Base
Bibliographic Data Base
Major Issue Data Base
National Referral Center Resources Data Base
Selected Science & Technology Data Base

Other CRS computerized capabilities include the use of the Administrative Terminal System (ATS) and a management information system. Contracted services also have been employed by CRS in helping to meet its research and reference needs. (These services along with those mentioned below will be examined in greater detail in Section V.)

Through a coordinated work effort, ISO and CRS continue to develop other computer applications for the benefit of Congress. Illustrations of past major support efforts were:

A special questionnaire series prepared for the House Committee on Education and Labor was analyzed by CRS and all data preparation, programming, and processing of the questionnaire were conducted by ISO.

Preparation of a computer-generated print entitled *Federal Advisory Committees for the Senate Committee on Government Operations.*

A current assignment is expanding the Legislative Indexing Vocabulary (LIV) and bringing it on line for use in searching the CRS data bases.

SELECTED ISO TASKS

Selected tasks have been performed by ISO for the Congress, such as the continuing technical assistance provided the Senate Subcommittee on Computer Services. A working relationship has been established with the House Information Systems cadre for the development of ADP-dependent services. One of the most notable activities of ISO has been its assistance to the recent Senate Select Committee on Presidential Campaign Activities investigating the "Watergate Affair." A program adaptation enabled the committee staff to analyze and compare testimony given by many witnesses. This was the first use of the computer in evidentiary proceedings. Similar programs were instituted for the House Committee on the Judiciary's impeachment inquiry.

Realizing the need for a continuation of these types of services, CRS and ISO formed the joint Working Group on Automation comprised of information specialists, analysts, and management personnel. Its purpose is to coordinate, monitor, and evaluate congressional information support activities related to automation.

NON-CRS AUTOMATION

Within the Library, other departments are utilizing information technology in the development of applications of possible use to the Congress. One prime example is the MARC Development Office of the Processing Department. Under the leadership of Henriette D. Avram, professional and technical staff are currently responsible for:

All aspects of the development and implementation of systems for cataloging data in machine-readable form;

Using those records to produce book catalogs, special listings, and other printed output; and

Developing applications of these records to achieve internal bibliographic control.

During this congressional session, it is envisioned that the MARC data base will become accessible via remote terminals both within the Library and on Capitol Hill. This will add coverage of published books to that of periodical and professional literature already available in the CRS Bibliographic Citation File.

IV. LIBRARY OF CONGRESS INFORMATION RESOURCES AND SERVICES

Overview of Resources on a Departmental Basis

INTRODUCTION

The primary consideration in any discussion of automated resources is that these resources are but a means to an end. The end is the efficient delivery of selected information to the user. As one of the world's largest and busiest repositories of information, the Library of Congress is faced with the never-ending task of making it possible for its community of users—Members and committees of Congress, scholars, researchers, and the public—to gain rapid and easy access to the Library's vast storehouse of information and expertise.

In applying automation technology as a contribution toward achieving this goal, the Library has assigned literally scores of people to prepare information for machine storage, processing, and retrieval. These and other staff members also retrieve information from storage, either for delivery to a user outside the Library, or as inputs to ongoing research projects within the Library. All use a variety of machines—cathode ray tube teminals, typewriter terminals, teletype machines, small, on-site printers—to carry out these operations.

Supporting these input-output activities is a central data processing facility consisting of people operating a main computer, auxiliary control equipment, telecommunication units, storage devices such as magnetic tape or disk drives, and various high-speed printing devices. In addition, there are computer programs or "software" which when resident within a computer system activate both the main computer and other devices of the central facility, as well as the remotely-connected input and output terminals. The objective of this activity is, of course, the electronic capture, storage, and retrieval of information, and its delivery either selectively or in predetermined packages to the ultimate user.

These Library resources—staff, hardware, software, and files—and the funds to support them will be summarized for the entire Library in the paragraphs that follow. Resources will be outlined by department—the Administrative Department, the Processing Department, the Reference Department, the Copyright Office, and the Congressional Research Service. Special emphasis throughout the first half of Section IV has been placed on remote terminal access, data bases, the MARC format, the on-line MARC Search System and the SCORPIO retrieval system, with concluding commentary on congressional users. (See Appendix G for selected budgetary data.)

ADMINISTRATIVE DEPARTMENT—INFORMATION SYSTEMS OFFICE

Staffing

The Administrative Department's Information Systems Office (ISO) has a staff of 84 persons, providing the ADP support for general Library applications. It is headed by an Office of the Assistant Director. There are three technical groups. The Computer Applications Office (Com Appl) performs systems analysis and feasibility studies for computer applications within the Library's mission and is responsible for developing, testing, and maintaining the necessary application programs and documentation resulting from these activities. Applications are provided for the Reference Department, the Copyright Office, CRS, and the Administrative Department, in addition to specific projects such as SCORPIO which is not confined to any one organization. The System Development and Standards Office (Sys Dev) provides and supports the operational software and communications systems for the central computer center, including the computer operating system, data communication system, and computer programming language systems. Sys Dev also provides Library-wide ADP standards, training, and publications. The Computer Service Center (Com Serv) specifies, operates, and controls the central computer and related equipment in the Library. Com Serv also schedules tasks operated in the computer facility, maintains the machine-readable files, and specifies the central procurement for all electronic data processing and peripheral equipment for the Library. For an ISO organization chart, see Appendix B.

Hardware—Computer Service Center

Com Serv is responsible for the maintenance and operation of the two main computers (IBM 370/158's) with the following major auxiliary devices: 3 high-speed printers, 32 disk storage units, 12 tape drives, 2 card readers, and 2 communications controllers. More detailed descriptions of these and other equipment may be found in Appendix C.

Hardware—Terminals

Emanating from the Computer Service Center are the networks of remote computer terminals which support the various data generation, word processing, and automated information retrieval activities of the Library. By the end of the current fiscal year it is expected that 700 terminals will be connected to the LC computer system. The distribution of 304 terminal units at the end of fiscal year 1975 was as follows:

Librarian's Office	1
Administrative Department	23
Processing Department	85
Reference Department	19
Copyright Office	70
Congressional Research Service	82
Law Library	0
Congressional Offices	24
Total	304

The total number denotes those remote devices connected to the Library's computer system. The 85 Processing Department terminals were not all connected at the end of fiscal year 1975. The 280 terminals

actually located in the Library are funded through ISO. Excluded from the total are those LC departmental terminals connected to "outside" (of the Library) computer systems. Descriptions of these units and their functions are highlighted below. For more detailed information on remote terminals and user groups see Appendices E and F.

Software—Systems

Major software packages providing access to data stored in the central computer facility are: the Computer Operating System (IBM OS/ VSI and associated computer programs), Data Communication Systems (e.g., CICS, DMS, and ATS), Computer Programming Language Systems (e.g., ANS, COBOL), Computer Performance Systems (e.g., CUE), and Computer Utility Software (e.g., MARK IV).

Software—Applications, including SCORPIO

Com Appl has developed, maintains, and continually upgrades the SCORPIO (Subject-Content Oriented Retriever for Processing Information On-line) system of computer programs which provides for on-line interactive (question-answer) information retrieval from CRS and LC bibliographic and legislative files via remote terminals. The SCORPIO system was initially available in CRS but it now may be accessed both by congressional offices and other parts of the Library. The Com Appl is also responsible for specific applications programs for the Administrative, Reference, and CRS departments; the Processing Department applications programs are written by that department's own staff.

Budget Considerations

The ISO FY 1976 Personnel Budget is $1,670,629 for 84 total "Authorized Permanent Positions." The FY 1976 "Computer Equipment Rental Budget" is $2,374,583 for the Com Serv, plus $1,540,629 for remote terminal equipment, making a total of $3,915,242. ISO contracts for service and for software applications during FY 1976 total $71,000 at the present time. (See Appendix J for a list of computer hardware and software vendors and Appendix I for more detailed information on contractual arrangements.)

PROCESSING DEPARTMENT

Staffing

The MARC Development Office and three divisions account for the automation program of the Processing Department (see diagram, Appendix A) designed to develop and implement an integrated man-machine system to control bibliographic information and make these data available to the Nation's libraries (Core Bibliographic System). The core record in the machine system on which the bibliographic system is based is the MAchine-Readable Cataloging (MARC) record (see below).

The principal advantage of the bibliographic system will be:

(1) Bibliographic processing will be more closely controlled, resulting in more expenditious production of bibliographic information;

(2) Bibliographic information will be available through a greatly increased number of access points;

(3) Bibliographic products will be made available in a wide variety of forms—printed, microform, machine-readable form, on-line, etc.;

(4) Costly duplication of bibliographic processing will be decreased both at LC and other U.S. libraries; and

(5) Tools will be available for cataloging nationally in a consistent manner, thus accelerating the building of a national bibliographic network;

The expansion and more rapid creation of bibliographic information should benefit the users of the Library's collections (Congress, scholars, students, etc.) and the Nation's libraries which depend on LC for bibliographic support.

Fourteen automated projects involving 139 persons (61 librarians, systems analysts, and computer programmers, 8 operators, and 70 data entry personnel) can be subsumed under seven categories: a planning and design effort, an order system, the MARC Production System (off-line), a material-in-process control system, an authority system, a cataloging distribution system, and a national and international standards and machine-readable resource sharing system. The Multiple Use MARC System (MUMS) being developed is to provide common computer programs for all of the various on-line bibliographic functions.

The Core Bibliographic System (CBS) project develops medium to long range plans for the automation of technical processing in the Library of Congress and related activities, including services provided by LC to the national and international bibliographic communities. Since the implementation of the integrated system is a long-range developmental effort, the individual functions are designed to be both immediately useful as they are built and capable of integration into the long-range system.

The Library Order Information System (LOIS) maintains files to control the purchase of monographic and subscription orders and tracks these orders until the item is received and the invoice paid. The MARC Production System builds and maintains the off-line (magnetic tape) MARC data base containing catalog records for a number of types of material (e.g., books, serials, maps, and films). The present file serves as the basis for the Library's bibliographic activities and is used for the production of catalog cards, book catalogs, and computer searches.

The Automated Process Information File (APIF) system will control the flow of materials in process. The authority system provides information on the established form of name for authors and subjects and is vital to any bibliographic control and access system. The subject system is presently operational and maintained off-line.

Four projects center on cataloging distribution services: a Catalog Card Ordering System, a Card Order Administrative Control System, a Catalog Card and Book Catalog Photocomposition System, and a MARC Distribution System. The standards and resource-sharing activities comprise two areas. Under standards, the Processing Department works to establish formats and character sets to be used in the automation of bibliographic activities, both nationally and internationally. With the establishment of these standards it is possible to share resources between libraries within the United States and between libraries in different countries. Examples of these are the COMARC project (funded by a grant) under which the Library of Congress receives MARC records from other libraries and in turn makes these available to libraries throughout the country. Another example is the

Register of Additional Locations which provides information on the locations of books in various libraries throughout the country. A third example are the agreements between the Library of Congress and the National Library of Canada and the Bibliotheque Nationale of France to exchange MARC tapes containing records for books published in those countries.

Hardware—Terminals

At the end of FY 1975 the Processing Department had 85 remote devices, a number that is expected to almost triple (to 265) by the end of the current fiscal year. Of these units, 55 currently are cathode ray tubes used for the Automated Process Information File (26), MARC Editorial (19), MARC searching (8), and MARC Development (2). Most of the remaining units are typewriter-type terminals used for a variety of tasks such as Order Division card control (5).

Catalog card production equipment located at the Library's Navy Yard annex includes the following: 1 VideoComp (Model 77/800), 1 IBM computer (IBM Model 77–135), and recognition equipment (e.g., 3 bar code reader/sorters); for details see Appendix C, Table 2.

The MARC Format

The MAchine Readable Cataloging (MARC) format can accommodate the bibliographic description of all forms of material—books, serials, maps, films, etc. and the related records such as authority records for authors and subject headings. Designed by the Library in the late 1960's, the MARC format now serves as a national and an international standard for the Library community. The format is used outside the Processing Department for bibliographic control, such as by a number of Reference Department files and the CRS bibliographic data base.

Bibliographic Data Base Generation—Off-Line MARC

The existing data base of 600,000 bibliographic entries is increased by 140,000 citations per year, capturing and cataloging information for books, films, maps, and serials. Except for maps, input citations are terminal keyed in the Processing Department. The off-line results are:

(1) Catalog Card Distribution Service which controls over 5.5 million titles cataloged since 1896 and growing at a rate of over 230,000 titles a year. Titles may be ordered individually or on standing orders by over 30,000 institutions and individuals. An optical character recognition system is at the heart of this complex system. All machine-readable records are photocomposed.

(2) The MARC Distribution Service which distributes current information on magnetic tapes to 67 world-wide subscribing institutions which, in turn, make the information available to approximately 1,500 users.

(3) Book production through photocomposition for *Films and Other Materials for Protection*, *Library of Congress Subject Headings*, and the *Register of Additional Locations*.

For the Reference Department, a Main Reading Room reference collection catalog was produced by lineprinter. There are 16 additional publications which will be automated as resources become available. Some are in process now. *The Digest of Public General Bills and Resolutions* will be photocomposed in the Processing Department for 1976 and thereafter.

(4) Off-line searching of multi-faceted queries are made through the MARC Retriever. This program is used to answer questions from the Library, Congress, and, as time permits, outside users.

(5) A current awareness service is available to the Library, Congress, and, as time permits, to outside users.

The On-Line MARC Data Base

At the present time the use of on-line MARC Search System based on the data base described above is limited to users within the Library. Persons in the Processing Department, Reference Department, and CRS use the system for technical processing, reference, and interlibrary loan activities. Under development is an on-line Automated Process Information File (APIF) system designed to provide both bibliographic and location control over all material in the process of being cataloged. One of the primary uses of the in-process file is the ability to locate and provide the Congress with material not yet fully cataloged. The APIF itself is just a part of a major effort to have all cataloging on-line and in machine-readable form in the early 1980's. Plans call for more on-line processing in the same time period of which the most beneficial to the nation will be on-line access to the full MARC data base and associated control files. This could make it the national network node of last resort for records and the primary source for authority information.

Software

Computer programs for the Processing Department are written by its own personnel for application work and for some of its own systems programming support. For the central computer, system programming support is provided by ISO.

Use of External Data Bases

The Library of Congress and ten other institutions constitute a consortium connected by data communication lines to a common computing facility located at the Ohio College Library Community (OCLC), in Columbus, Ohio. The purpose of the consortium is to build a centralized data base for serials. The Library has on-line OCLC access by way of five cathode ray tubes (three with printers). These devices are funded by ISO.

Budget Considerations

The 90 Processing Department terminals (85 connected to CSC and 5 to OCLC) are supported by funds from the ISO budget. The Processing Department's FY 1976 budget for personnel devoted to automated activities is $3,169,438 of which approximately $308,000 is funded by grants. Because of the sale of end products, much of the Processing Department's costs are redeemed and the U.S. Treasury is reimbursed. Although not all of the materials sold are produced by computer supported activity, it is estimated that during FY 1976 total sales will bring in approximately $7,000,000. Processing has several on-going studies being prepared on a contract basis supported by Library funds or by grants from previous fiscal years.

REFERENCE DEPARTMENT

Staffing

The Reference Department currently has eight significant automation projects involving 79 persons (on both a full- and a part-time

basis) associated with eight of the department's 15 divisions. (See Appendix A for an organizational outline.) Operational applications projects have been developed by the staffs of ISO and the MARC Development Office. The Division for the Blind and Physically Handicapped (DBPH) has applied automation to three operational and two developmental projects for the administrative and bibliographic control of its special materials. General Reference and Bibliography is a producer of data and a user of MARC data base printed products and the Library's on-line files; the Loan Division also makes use of these latter data resources and is developing a record system for books on loan. Map bibliographic files have been prepared (built and maintained) by the Geography and Map Division using the MARC format for a half-dozen years. The Manuscript Division utilizes the computer to handle its unique collections, while Prints and Photographs, and Serial Division have systems under development. The Science and Technology Division (S&T) uses the MARC format for the production of two recurring specialized bibliographies. Accessible on-line through the use of SCORPIO are the National Referral Center resource file and the Science Reading Room file of bibliographic citations. A cathode ray tube unit is in the Science Reading Room for use by the public on an experimental basis.

Hardware—Terminals

A total of 19 terminals was connected to the Library's Com Serv at the end of FY 1975, with a requested increase of three remote devices for FY 1976. Of the current inventory, ten are typewriter-type terminals, six are cathode ray tubes, and the remainder are teletype devices.

Bibliographic Data Base Generation

The Reference Department uses the MARC format in creating and maintaining a number of machine-readable bibliographic data files. Major applications are: Division for the Blind and Physically Handicapped book citations, map citations, manuscript citations, developmental applications to motion pictures and newspaper files, and three Science and Technology files. These latter scientific data resources are as follows: the National Referral Center Resources File containing more than 11,500 descriptions of information-providing organizations; a bibliographic citation file comprising the Science Reading Room Reference Collection; and the Antarctic/Cold Regions Bibliography file of some 40,000 biliographic records used for publishing recurring book catalog publications. The first two files may be accessed using SCORPIO.

Use of the Off-Line MARC Data Base

From the Library's off-line MARC data base, the Reference Department's divisions make frequent use of this service; the General Reference and Bibliography Division, for example, receives two recurring automated products: a catalog of the Main Reading Room Reference Collection and a number of printouts of newly cataloged material. Other applications are operational or under development.

Use of On-Line Data Bases

Both Science and Technology, and General Reference and Bibliography, have on-line terminal access via the SCORPIO system, and thus

can utilize the three CRS and two S&T available files. The CRT located in the Science Reading Room is a pilot study effort featuring on-line data availability for public use. General Reference and Bibliography also has an arrangement for the use of a terminal with on-line access to OCLC, as already described. Finally, five Reference Department locations make use of the on-line MARC system.

Software

Reference Department computer program applications support is provided by the ISO Computer Applications Office and the MARC Development Office; operational projects use the Sys Dev systems software.

Budget Considerations

The computer terminals located in the Reference Department are funded through the ISO budget. Apart from the ISO budget, major contracts and grants funded in fiscal years prior to FY 1976 include: (1) DBPH Catalog Card Conversion—Electronic Keyboarding, Inc., $37,296; (2) Spanish Braille Project—The Mitre Corp., $3,532; (3) Design and analysis of a library automated storage and retrieval system for DBPH—System Architects, Inc., $37,974; (4) The MARC Map program was initiated in 1968 with a grant from the Council on Library Resources; (5) the Motion Picture Section cataloging project received a grant of $110,000 from the National Endowment for the Humanities; (6) The S&T Antarctic/Cold Regions Bibliography files project is supported by approximately $100,000 annually from the National Science Foundation.

COPYRIGHT OFFICE

Staffing

In the Copyright Office 70 persons are directly involved in two automated projects, an on-line cataloging project and a deposit accounts project. Copyright is supported by a technical staff of systems analysts and computer programmers from ISO. For an organizational chart of the Copyright Office, see Appendix A.

Hardware—Terminals

A total of 70 on-site terminals at the Copyright Office was connected to the Computer Service Center at the end of FY 1975; 60 of these were used by the on-line cataloging project. The department expects a FY 1976 increase of 34 devices, most of which are assigned to the cataloging activity.

Cataloging Data Base Generation

By means of the Copyright Office Publication and Inter-active Cataloging System (COPICS), copyright registrations are cataloged on-line via cathode ray tube terminals connected to the Library's computer facility. Cards and book catalogs are then produced from the collected citations.

Deposit Accounts System

The Deposit Account Name and Address Update System (DANAUS) contains a current file of some 1,600 remitters holding deposit accounts (of funds to be applied to copyright registrations).

Software

Use is made of the Sys Dev systems software and applications programs written by the Computer Applications Office of ISO.

Budget Considerations

The Copyright Office remote computer terminals are funded by ISO. Approximately $1,800,000 is budgeted by this department during FY 1976 for personnel concerned with automation activities.

A supplementary benefit of COPICS is the automatic computer production of copyright catalog cards, both for the Copyright Card Catalog and for purchase by specific subscribers. During 1975 an estimated 120,000 cards were produced for five subscribers at a total purchase price of $11,000. This figure is expected to increase as the service becomes more widely known.

CONGRESSIONAL RESEARCH SERVICE

Staffing

The CRS is divided into an Office of the Director and ten divisions, all of which are users of computer-supported activities. (See organization chart in Appendix A.) Major ADP groups are the Information Systems Group (ISG), overseeing computer applications and training in the use of SCORPIO and other on-line systems; data base generation groups (Bill Digest, Library Services Division, and Major Issues); the Congressional Reference Division; and individual analysts in the research divisions, including the Information Sciences Section of the Science Policy Research Division which conducts seminars and consultations, and prepares major research reports concerning the role of information technology in government and society. Computer programming support for these major applications is provided by ISO (Com Appl).

Hardware—Terminals

Of the 82 remote devices connected to the Library's Com Serv, 45 are typewriter-type terminals used for transmitting congressional inquiries, data base generation, and divisional report writing. A network of 17 cathode ray tubes (with 13 associated printers) permits access of the Service's three legislative files (plus the two Science and Technology files) via the SCORPIO software. CRS expects an increase of 60 terminals in FY 1976, mostly CRTs. Apart from these ISO-supplied machines, CRS also rents five other devices in conjunction with subscriptions to outside data bases (see below).

Inquiry Control System

Of the hundreds of incoming daily congressional inquiries into the CRS, approximately 15 percent are required the same day they are received and are labeled "rush." These rush requests are electronically transmitted by typewriter-type terminals to the answering divisions. The terminal network includes not only the CRS Reference Centers in the Senate and House, but also the Reference Department's Loan Division.

Legislative Data Base Generation

Three files of legislative information are created and maintained by the Congressional Research Service: the Bill Digest file describing

current legislation, the bibliographic file of references to the Service's official documents and serial literature collection, and the Major Issue file of CRS-written briefs on major issues confronting the current Congress. All three data bases (including the Bill Digest file for the previous Congress) are available for on-line searching by the CRS staff, Congress, and other Library components through the use of SCORPIO computer programs.

SDI and Hard Copy Resource

Even prior to providing on-line access to an ADP-supported SDI (Selective Dissemination of Information) system, CRS had created a computerized bibliographic data base. Currently, 512 subscribers receive weekly card stock printouts of recent additions to serial literature by subject profiles, serving both CRS staffers (346) and congressional offices (146). The Service provides a hard copy service for the original documents referenced by either the SDI printouts or terminal displays.

The Legislative Indexing Vocabulary (LIV)

The Legislative Indexing Vocabulary (LIV) was developed by CRS to insure consistency of subject indexing terms in the bibliographic data base. This thesaurus of some 6,000 terms, compatible with the LC subject headings, is now used as an indexing authority for the Bill Digest and Major Issue automated files. About to be published in its eighth edition, the LIV is scheduled to become an on-line file accessible through SCORPIO later this year.

Use of Library Data Bases

The three automated CRS legislative files have been available for remote terminal access using the SCORPIO programs for some time. From a test basis in CRS in 1971 the network of CRT units was expanded to the various CRS divisions and is now known as LIDS (Legislative Information Display System). Following a pilot project in the Senate for the past two years, the system is now being offered to all Senatorial offices and access from House offices is now a distinct possibility. Other automated Library data files available through CRS are: the S&T files, MARC data displayed on-line, and the off-line MARC data file.

Use of External Data Bases

To supplement internal automated resources in answering Congressional inquiries, CRS subscribes to a number of external data base systems. Three of these are data retrieval systems, the other three are for data manipulation. All are accessible by remote terminals located in CRS. In the first category are the *New York Times* Information Bank, MEDLINE of the National Library of Medicine, and the Department of Justice JURIS system. A cathode ray tube unit for JURIS and three videoscreen terminals for the Info Bank are rented using CRS funds. MEDLINE, as well as two data manipulation systems (Service Bureau Corporation and EDSTAT) can be accessed using existing Library typewriter (2741) machines. The third data manipulation system (Data Resources, Inc.) uses a rented terminal from DRI.

Software

For Library applications, CRS depends upon Sys Dev system software and Com Appl for applications computer programs. The CRS Information Systems Group periodically writes special programs to handle congressional inquiries.

Budget Considerations

CRS terminals connected to the Library's computer facility are funded by ISO. The external data base subscriptions described above are funded by the Service as follows: *New York Times* Info Bank (four subscriptions); MEDLINE (system use); JURIS (terminal rental); SBC (system use); DRI (system use and one terminal). The total estimated CRS expenditure for automated activities during fiscal year 1976 is more than $1,700,000 (See Appendix G for a detailed breakdown of this figure.)

CONGRESSIONAL USERS

Senate

In 1974–75, the Senate Committee on Rules and Administration requested that a network of CRTs be installed in the Senate in order to access the CRS legislative files under SCORPIO. A dozen devices were placed in as many offices. With the test a success, the Senate requested in the summer of 1975 that plans be made to place a dial-up terminal in each Member office. Implementation of that program is now under way, with expected completion of the network by the end of 1976. In addition, the Senate uses the Library's ATS on-line data manipulation system for the production of committee calendars. Six standing committees have on-site typewriter terminals to serve this purpose.

House

Plans are currently under way to provide House offices with access to the Library's SCORPIO retrieval system. Currently, some 20 to 30 offices have dial-up on-line terminals which can be connected to the Library's computer system.

Others

Two additional legislative offices have on-line connections to the CRS files. The Office of Technology Assessment has four devices accessing SCORPIO and two other machines that utilize the ATS report-writing capabilities. The General Accounting Office has a single connection to the five legislative files via SCORPIO.

Budget Considerations

Congressional users of Library data base systems—Senate, House, OTA, and GAO—provide their own terminals that tap the Library computer power and no charges are levied for the use of the systems accessed (i.e., SCORPIO and ATS). In addition, the Library provides training, troubleshooting, and documentation support.

OVERVIEW OF SERVICES ON A DEPARTMENTAL BASIS

The combined information resources of the Library of Congress—human, material, and computer-supported—enable it to provide a wide range of services not only to Congress but also to the remaining

segments of the Federal Government, the scholarly community, and the general public. To serve these various constituencies the Library is organized functionally, along lines of divided labor, into six departments under the direction of the Office of the Librarian. Three of these departments are structured in terms of activities surrounding the materials preserved in the collections. The Processing Department secures, uniquely identifies, and organizes books and other library materials. The Reference Department administers all of the collections except those in the field of law and serves the remainder of the government and the public while the Administrative Department provides functional support to all departments. In addition, there are three other departments that were created by special legislation: the Law Library, which services a broad spectrum of users of its special kind of information: the Copyright Office, which carries out its well-known statutory obligations; and the Congressional Research Service, which, in addition to maintaining its own current ready-reference information collections, uses the vast resources of the central Library to prepare research reports required by Congress. The section of the report that follows provides a more detailed overview of the responsibilities and functions of these departments and highlights key departmental computer-supported activities serving non-congressional clientele. (See Appendix A for a listing of key departmental management personnel and their responsibilities.)

OFFICE OF THE LIBRARIAN

The Office of the Librarian is responsible for: (1) long-range planning, direction, review, and audit of all programs, services, and operations throughout the Library; (2) the initiations and review of all policies; (3) the services of the General Counsel; (4) the review of recommendations concerned with budgets, services, and work programs in all parts of the Library; (5) the planning and implementation of the Library's general information, exhibits, and publications programs; (6) direction of the equal opportunity program; (7) the preparation and issuance of official regulations; (8) the arrangement of work programs for visiting librarians from foreign countries; (9) the American Revolution Bicentennial Program; and (10) the coordination of library services and programs with the other national and Federal libraries through the Federal Library Committee and the National Libraries Task Force on Cooperative Activities. It also is charged with representing the Library of Congress on a broad range of official boards and commissions, such as the National Commission on Libraries and Information Science, the National Historical Publications and Records Commission, and the Federal Council on the Arts and Humanities.

ADMINISTRATIVE DEPARTMENT

The Administrative Department is responsible for planning, implementing, directing, and coordinating financial management, personnel management, automation, preservation, and administrative management services and support programs of the Library. It provides administrative services to all elements of the Library including (1) financial services (accounting, budgeting, and managerial-financial

reporting); (2) automation planning and development and automatic data processing services; (3) recruitment, placement, classification, training, and use of personnel; (4) maintenance of central records and promotion of efficient paperwork practices; (5) photostat and photoduplication service for Congress, the Library, other government agencies, and the general public; (6) preservation, protection, and custodial treatment of Library materials; (7) management, operation, and maintenance of Library buildings, leased space, and related equipment and facilities; (8) administration of programs of health, safety, fire prevention, and physical protection of the Library, its staff, visitors, and property; (9) purchasing and contracting services; (10) procurement of personal property, furniture and equipment and non-personal services (including printing, duplicating, and publication services); (11) procurement and utilization of transportation, and communication services; and (12) supply management.

The central role of the Information Systems Office of the Administrative Department in the Library's automation activities has already been described earlier in this section. In addition to matters involving the application and use of computers and automated techniques for the other Library departments, ISO is responsible to the Director of the Administrative Department for the development and implementation of automated services to support the Library's administrative and management operations. The Personnel Data File contains pertinent current employee status information; the Budget Reporting System processes fiscal information against the master Budget file to produce various reports for the Budget Office; a Payroll Automation System produces payroll checks for Library employees (a similar system is used by ISO to produce the U.S. Supreme Court payroll) and all necessary control reports for the Accounting Office which has its own Accounting Records System; and an on-line Procurement and Supply System is used to control expendable and non-expendable supplies and material used throughout the Library, to assist in the control of inventories of office machines, furniture, and furnishings and other equipment, and to provide equipment repair analyses.

PROCESSING DEPARTMENT

With a staff of more than 1,700 employees and an annual budget of over $30 million, Processing is the largest department in the Library. Major functions of the department are (1) to acquire material of research value from the world at large; (2) to establish bibliographic control over this material; (3) to make the resulting bibliographic data available as widely and rapidly as possible; (4) to develop new routines and refine current ones in support of the first three roles; and (5) to provide leadership in all areas of library technical processing. The ultimate objective of this mission is to build, control and use information as one of the Nation's greatest resources in the service to Congress, the Nation, and the international research community.

The Processing Department embraces 17 organizational units on Capitol Hill and in 15 overseas offices. Working as a team, the department's employees acquire library material from every country and in every written language by purchase from over 1,000 dealers, by ex-

change arrangements with over 22,000 institutions, by transfer from other U.S. Government agencies, by gift, by copyright deposits, and by provision of State and Federal law. One group of staff members catalogs, classifies, assigns subject headings, and otherwise prepares library materials for control and, hence, retrieval for use by the Congress, Federal agencies, other libraries, and the public. Another group distributes this bibliographic data through book catalogs, machine-readable records on tape, catalog cards, and proofsheets. Technical publications, created in the course of the department's cataloging operation, are also distributed. In all, there are more than 30,000 customers for these services. The distribution of this information encourages its standardization which facilitates communication and, of great importance, avoids the need for others to perform the same expensive work in cataloging.

Because of its central role as the major distributor of bibliographic records, the Processing Department must engage heavily in development work in order to continue to meet the needs of its users; to adjust to changes in kinds, subject matter, and format of informational material; and to best utilize the latest developments in the technology applicable to it. Its central role also causes it to assume external leadership. For example, it is evident that the department will ultimately become the central authority and a place of last resort for bibliographic data in the rapidly expanding computer networks in the library and information field.

The degree to which the department is now able to accomplish its mission would not be possible without the major support which computer technology provides. Of primary importance among the services and products which are computer supported are those related to:

The Automated Process Information File (APIF);

The MAchine-Readable Cataloging (MARC) data base;

The development and maintenance of a national serials data base;

The preparation and distribution of catalog cards, book catalogs, technical publications, and MARC tapes; and

The development and maintenance of an authority data base.

Since 1901 the Library of Congress has been disseminating cataloging information on printed cards, and during the last three decades in the form of book catalogs. With the development of the MARC data base, the Library began in 1969 providing bibliographic data which appear on catalog cards in machine-readable form. MARC tapes are available for many types of material: books, serials, maps, motion pictures, filmstrips, and other audiovisual materials. At the present time, the linguistic scope of coverage for books includes English, French, German, Spanish, and Portuguese materials. Films, maps, and serials are available in all languages. The Processing Department is progressing toward its goal of placing the material currently being cataloged into the MARC system and allowing on-line access by regional and State networks. Presently the one-line MARC Search System is confined to users within the Library of Congress. The uses of the system across departments can be summarized as aiding technical processing, the reference function, and, in conjunction with other files, the location of materials for inter-library loan. The MARC Retriever Service currently permits batch searching of the sequential

tapes by author, subject, classification number, and several other retrieval parameters. Several modules of the Multiple Use MARC System (MUMS), the principal machine component of the core bibliographic system, are now operational. Modules which will support the *Register of Additional Locations* are now being added, and modules for the authority system will be added in 1976.

The Cataloging Distribution Service provides bibliographic data in card format for any of the 5.5 million titles cataloged by the Library since 1896. This service makes use of computerized MARC records. Book catalogs are also a major source of bibliographic information. The Processing Department prepares 53 individual publications, serial and monographic, with about 280,000 copies distributed in 1974. A considerable effort has taken place and is underway to use automated systems to produce and control this work. A number of technical publications concerning Processing Department automation has been prepared for general distribution in the interest of providing assistance both nationally and internationally toward standardization.

The Serial Record Division of the Processing Department monitors and participates in the CONSER (CONversion of SERials) Project which is intended to build a national serials data base in machine-readable form. This division also serves as the U.S. National Center for the International Serials Data System, a network of control centers in nine countries responsible for the exchange of data about serials and assignment of an International Standard Serial Number (ISSN) and a unique "key title" to each serial title added to the system.

REFERENCE DEPARTMENT

The Reference Department, through its subject and area specialists, reviews and recommends the acquisition of material to assure the continued excellence and growth of the collections to respond to the information and research needs of the Congress and to a great variety of national needs.

The Reference Department has the responsibility for maintaining, developing, and providing reference service from the general and special collection, numbering over 70,000,000 items. Nearly 2,000,000 pieces of material are made available annually to readers in 14 reading rooms and 300 assigned study facilities, or are lent to the Congress, Federal agencies, and users in other libraries. Replies are made to over 800,000 reference inquiries yearly in person, by telephone, and through correspondence. The Reference Department also compiles for publication a variety of bibliographies, indexes, and lists of abstracts to make the collections more readily accessible to the Congress, libraries, and the research community.

Not only are the collections heavily used by the various staffs serving the Congress, but they are of vital importance for research by agencies of the Federal Government and to scholars from all areas of the United States and from other nations who visit the Library to use bibliographic and reference services and do research in every field of study. The Library's collections also play an important role in the cultural, scholarly, and literary programs and activities of the Nation.

In addition, there are two unique divisions in the Reference Department, one which provides special research for Federal agencies,

and the other, the Division for the Blind and Physically Handicapped, which administers a national program to supply reading materials (braille books, talking books on records and tape, phonographs and cassette players) to blind and physically handicapped residents throughout the United States. Fifty-three libraries cooperate as regional circulation centers and use the mails (postage free) to service readers directly; machines are distributed by agencies in each state.

A majority of the 15 divisions of the Reference Department has initiated or are in advanced stages of developing computer-supported services designed to assist them in carrying out their respective missions. For example, the retrospective cataloging project of the Division for the Blind and Physically Handicapped (DBPH) is designed to bring all bibliographic descriptions of books provided by DBPH up to established standards and to convert the resulting information into computer manipulatable form. This will facilitate access to materials available to the blind and physically handicapped by providing network libraries with improved bibliographic access to these materials and will assist in the production of catalogs, bibliographies, and other tailor-made products to provide timely and accurate information on available material. DBPH also has an operational order control system to monitor and control the status of approximately 2,500 recorded and braille titles (500,000 copies) produced annually by the Library for distribution to cooperating network libraries and to store initial data for the creation of bibliographic tools such as printed cards or book catalogs. The control system eliminates duplication of clerical effort and filing activities and thus provides blind and handicapped readers with faster access to materials in usable formats by improving the flow of materials through the processing cycle.

The Loan Division currently controls the lending of material to local Federal libraries by a batch system which uses a keypunch as an input device. Under development is an on-line terminal based system which will be used for charging, discharging, and searching all loans and will also have the capacity for on-line account maintenance.

The Manuscript Division employs an automated master record of manuscripts to provide descriptive and statistical data on approximately 8,300 manuscript collections of over 33,000,000 items and 600 outstanding solicitations for manuscript collections. It is a punched card-fed program updated 12 times a year providing both staff and patrons with appropriate alphabetical listings of collections, listings by period of American history, collection location listings, and a varied assortment of analytical listings including shelflists, quantitative measurement of processing progress, and management of recently received material.

The National Referral Center, operating within the Science and Technology Division, assists those who have questions in science and technology, including the physical, biological, social, and engineering sciences, by referring them to individuals and organizations able to answer the questions. The Center provides a single place to which Congress and the public may turn for advice on where to obtain information on specific topics in science and technology. The data base is a subject-indexed inventory that contains descriptions of some 11,000 (10,600 domestic and 400 foreign) information sources which have specialized knowledge in the areas of science and technology and

are willing to provide information. The file is currently searchable on-line by subject, by organization name, and geographically by city and state. Broad compilations of these records are also published in the series entitled *A Directory of Information Resources in the United States.*

Some 100,000 references in science and technology, selected from the Library's MARC data base, are available in a pilot program for on-line browsing and retrieval via computer terminal. The file, called Selected Science and Technology References (SSNT), was put on-line for experimental "hands-on" use by the public in the Science Reading Room and covers English-language books cataloged by the Library since 1969 and bibliographic records covering the nearly 7,000 titles of the special reference collection in the Science Reading Room. The SSNT file is searchable by author, title, subject, Library of Congress classification number, and LC card number.

COPYRIGHT OFFICE

The Copyright Office is responsible for administering the copyright law of the United States. This involves operation of the registration and deposit system as required by Title 17 of the *U.S. Code*, including: (1) examining, cataloging, fiscal control, and record maintenance required to process all material submitted for copyright registration and recordation; (2) providing the public with information about the copyright law generally, and about particular copyright claims; and (3) dealing with a wide range of legal and policy problems involving the present law and its interpretation. In addition, the Copyright Office's responsibilities require it to play a leadership role in initiating, evaluating, and participating in consideration of legislative programs, including general and partial revision of the present copyright law and a diversity of measures related to copyright. The Copyright Office also participates actively on behalf of the U.S. Government in the development of international copyright law, and in dealing with a wide variety of foreign and international problems involving copyright and related forms of intellectual property.

By law, each copyright registration must be cataloged and entered into a record accessible to the general public. Prior to automation the catalog entries were made on cards using typewriters. Under the automated Copyright Office Publications and Inter-active Cataloging System (COPICS), catalog entries are now made on-line via terminals connected to the Library's main computer facility. Each entry is automatically checked for syntax and completeness; error indicators show when a mistake has been made. The entries are accumulated, sorted internally, and produced as needed in two forms: in card form for subscribers and the Copyright Office file, and printed master listings for the book catalogs. This system has provided a number of benefits including decreased cataloging time, increased accuracy, a reduction of six months to two years in the production of the book catalogs, and a reduction by three months in the time required to produce both subscribed and copyright catalog cards. Currently under development is a subsystem of COPICS designed to automate the cataloging of periodicals. The Copyright Office has a firm commitment to automation over the next few years in the areas of fiscal control, in-process control, reference searching, and inventory control.

LAW LIBRARY

The Law Library is the only comprehensive legal research library of the Government. Its staff is responsible for the development, maintenance, and service of a law collection of over 1,600,000 volumes—probably the largest ever assembled. This collection comprises legal sources and legal literature of all foreign countries as well as the United States, and covers all legal systems. Reader reference service is maintained by the Anglo-American Law Reading Room, two foreign law reading rooms, and a Law Library in the Capitol.

The professional staff of the Law Libarary includes 15 members of American bar associations and 25 members of foreign counterpart organizations. These legal specialists, in frequent consultation with the CRS American Law Division, provide bibliographic and informational services, prepare background studies, compile comparative studies, and make available legal opinions and translations involving the use of materials in over 50 official languages. Utilizing these services are Members of Congress, congressional committees, officers of the Legislative Branch, the Supreme Court and other units of the Federal Judiciary, and certain Federal agencies, including the State and Justice Departments. Work in foreign and international law entails not only locating and analyzing laws in their original languages, but also their translation and communication into English legal terminologoy readily comprehensible to the American user.

The Law Library is developing means by which it can broaden its linguistic and legal coverage of the world's legal systems, including: (1) making expanded use of microtext materials in reference facilities, particularly the Law Library in the Capitol where space is so limited; (2) exploring the use of computer technology and data bases to facilitate legal reference and research services; (3) making available on an expanded basis legal information gathered by research and legal specialists in preparation of detailed studies and reports on foreign, international and comparative law; (4) facilitating legal research by expanding and accelerating the preparation of indexes, digests, and guides to foreign law and legislation; (5) exploring the possibility of improving contacts with foreign legal centers for the purposes of increasing awareness of developments in foreign, international and comparative law and for opening new approaches to the rapid acquisition of legal materials; and (6) expanding the linguistic capability of the staff through special language instruction.

CONGRESSIONAL RESEARCH SERVICE

The Congressional Research Service responds directly and solely to the research, analytical, and informational needs of the Congress. CRS has seven subject-oriented research divisions, a research division of Senior Specialiists with broad coverage of many subject areas or disciplines, a general reference and informational division, an internal CRS library support unit, and the Office of the Director. The responsibilities and services of CRS are the subject of the next section of this report.

V. COMPUTER-SUPPORTED SERVICES FOR CONGRESS

CRS Major Computerized Services

CONGRESSIONAL REQUESTS

The numerous requests from Congress to CRS regarding automation may be divided two ways—(a) *about* automation and (b) those requiring the *use* of automation. The former category includes questions like: "I'd like a biblography on computers and privacy." "How many computers are there in the Executive Branch?" "Prepare a study on the role of computers in political redistricting." Examples of the latter category are: "The Subcommittee has a magnetic tape that needs to be sorted and printed." "Please tabulate my box of questionnaire results." The examples are meant to draw the distinction between inquiries regarding *research* about automation and those involving CRS *application* of automated techniques. Research questions are answered by the Information Sciences Section of the Science Policy Research Division, and applications support is provided by the CRS Information Systems Group. In practice, though, other sections of the Service are involved: subject divisions and ISG handle long range data manipulation projects; subject researchers, reference librarians and bibliographers make literature searches using manual and automated information resources; and a number of people offer training and give demonstrations of automated tools. Appendix G. provides budgetary information on CRS automated activities (FY 1976).

LEGISLATIVE INFORMATION DISPLAY SYSTEM (LIDS)

The CRS Legislative Information Display System consists of three files—the Bill Digest file, the Bibliographic Citation file, and the Major Issues file. These three files, together with two other files from the Science and Technology Division of the Reference Department, are available to users within the Library and terminal-equipped offices on Capitol Hill using the capability of the SCORPIO retrieval system. SCORPIO (Subject-Content Oriented Retriever for Processing Information On-Line), as described in Section IV, is a system of computer programs providing on-line access to Library of Congress automated files by remote computer terminal. A person can sit at a cathode ray tube terminal, for example, key in a question, and receive the answer flashed on the screen in a matter of seconds. If a local printer is available, the displayed results can be printed. (Alternatively, a typewriter-like terminal may be used for just a printed response.) The SCORPIO programs are written, maintained, and upgraded by the Library's Information Systems Office. SCORPIO is currently available for use from 8:00 A.M. to 8:00 P.M. Monday through Friday. There are one

or more terminals located in the CRS Reference Centers in Senate and House office buildings for congressional staff use. The network terminals are located throughout CRS for use by its research staff, and the system is being expanded into Senate and House offices by installation of dial-up terminals of several types—cathode ray tube, typewriter, and teletype.

The Bill Digest File

This data base has been created and kept current by the American Law Division of CRS. Featuring legislative content and status information, the file contains a short description ("digest") of the content of the proposed legislation, its current status in the legislative process, names of sponsors and co-sponsors, committees to which assigned for action, and a listing of action taken on it. Information on a bill or resolution may be retrieved by bill or public law number, subject, sponsor(s), or committee(s) involved. Each bill is monitored for 22 data elements. The file, containing in essence the content of the Service's continuing publication, *The Digest of Public General Bills and Resolutions*, is updated daily and is usually current within 48 hours of floor or committee action.

The Bibliographic Citation File

Since 1969, this computerized data base has been accumulating citations to CRS' own written products (reports, multilithed studies, committee prints, and major memoranda); and all of the major publications of the Congress, the Executive branch, the United Nations, and the Organization of American States; and a wide range of other documents and periodical literature articles. The operators of this system attempt to identify and input citations to major publications of State and local governments, universities, and international organizations which relate to matters of congressional interest. Included are major articles from 150 law journals, plus some 6,000 magazines and scholarly periodicals. Library Services Division is responsible for this data base; division bibliographers add approximately 3,000 citations to the data base each month, and the files are updated weekly. All of this material is coded by subject and may also be retrieved by author, type of document, and time frame. To maximize use of this data base, CRS develops SDI (Selective Dissemination of Information) profiles for system users, to be matched against keywords describing each item in the bibliographic file. Using these, the computer is able to search each week's new material and identify current items according to the subject specialization and area of interest of each system user. Thus, if a researcher is responsible for tracking ongoing developments in crime as a national issue, the computer will identify those articles, reports, and documents which relate to the subject in its broadest aspects, such as gun control, delinquency, prison reform, street lighting, violence on television, etc. The computer prints these out on individual, subject-headed cards which are sent weekly to subscribers. CRS has been given permission to make this service available to congressional committees, as well as to CRS researchers. Almost 500 individual profiles now are searched and distributed weekly: 354 to CRS staff, 132 to congressional offices, and 10 to GAO.

The Major Issues System

Originally requested by the Senate Committee on Rules and Administration, the CRS Major Issues System now is available to all congressional offices. This computerized file consists of briefing papers on about 200 frequently-changing major issues of congressional concern. Each issue brief contains a definition and background analysis of the issue, a listing of current, relevant legislation before the Congress and of pertinent congressional hearings and reports, a chronology of significant events which brought the matter to public attention, and references to additional information available in the professional literature. Issue briefs are written by subject specialists throughout CRS and the file is maintained, edited, and regularly updated by the CRS Issue Briefs Unit, which is part of the Director's Office of Special Programs. The issue briefs are designed for instantaneous retrieval on cathode ray tube terminals (located within CRS, its Reference Centers, and various Senate and House offices), but the material also may be retrieved in hard copy via typewriter terminals or high-speed printers in the Library. A list of current issue briefs is sent to all congressional offices semi-monthly and any topic which appears to be of interest may be requested by telephone. A paper copy will be delivered to the inquiring congressional office within the work day. Sample issue briefs available include: "Energy Proposals—the Congressional Response," "General Revenue Sharing," "Defense Manpower Costs," "National Health Insurance," "Equal Rights Amendment," and "Privacy: Information Technology Implications."

Special Support to CRS On-line Files

TERMINAL SEARCHING

The response flashed on a cathode ray tube screen may in itself be sufficient to answer a user's question. For example, a congressional office staffer with access to a terminal may use the SCORPIO retrieval capability to ascertain the status of a specific bill. A CRT-associated printer may be useful if the computer response is likely to exceed human memory. When typewriter terminals are used, both questions and answers are printed during the entire interactive search process. As already mentioned, congressional offices without remote terminals may receive assistance from the CRS-operated Senate and House Reference Centers which are equipped with CRT devices. Training of congressional staff in terminal use is rendered by the Center's librarian staffs or the CRS Information Systems Group.

HARD COPIES

What about especially lengthy responses? Suppose a user wants the hard copies (i.e., printouts of SCORPIO search results) for 15 bill abstracts, 83 citations, or 4 entire issue briefs? To print this volume of information using a slow, on-site printer would be inefficient, but there are alternative approaches to obtaining such desired data. For the Bill Digest files (93rd and 94th Congresses), CRS has a "bill tracking" service. The result or a SCORPIO search—a list of bill numbers—is entered into the ATS system and processed on an overnight basis using especially written computer programs; the next day's output is a 11 x 14⅞ inch mini-Bill Digest printout for the bill num-

bers indicated. This tracking service is not usually requested as such by congressional offices, but is frequently used as an automated tool by CRS staffers in answering congressional requests for bill listings by subject or sponsor.

For the CRS bibliographic file there is no exact analog to bill tracking, that is, no method of printing a bibliography by feeding citation numbers into the computer. There is, however, a "MARC retriever" computer program that allows special searching of that bibliographic data base using a search logic different from the SCORPIO approach. A biblographic question is translated into the retriever language by Library information specialists, placed on punched cards, and processed at the Computer Service Center. A high-speed printout is the result. This service, too, is used primarily by CRS researchers in answering long lead-time congressional requests, rather than directly by congressional offices. Hard-copy issue briefs are provided by photocopying master sets of printouts of the issues either by CRS or the House and Senate Reference Centers. The printouts are produced by special programs which extract the text from computer storage and reformat it for the printed display.

ORIGINAL DOCUMENTS

Most computer on-line information retrieval systems search references or other surrogates to original full-text documents, rather than the full texts themselves. The key consideration traditionally has been the computer storage and processing costs necessitated by the machine manipulation of a citation to *Ulysses* (for example), rather than the book itself. The significance of this approach in terms of SCORPIO is as follows. Bill digest records, although bearing much information, are nevertheless not the bill texts; for the latter, congressional offices rely on their traditional document room sources. Bibliographic records, again, are citations to, rather than texts of, serial articles and publications. Here, however, in conjunction with CRT displays or the distribution of weekly SDI notifications, CRS offers a hard-copy service: the original texts are supplied to congressional offices either on loan or in photocopy form (where copyrights are not violated). The on-line issue briefs are an exception. They are original documents displayed and printed in their entirety.

External Data Retrieval Systems

To supplement the CRS information sources available by using SCORPIO the CRS subscribes to three external data retrieval systems:

THE NEW YORK TIMES INFORMATION BANK

Terminals allowing user access to the *New York Times* computerized "Information Bank" are available to the House and Senate in both CRS Reference Centers or by sending inquiries to the CRS Congressional Reference Division. The "Infobank" is based in New York City and special cathode ray tube terminals with associated printers are linked to that data base via telephone lines. The data base contains abstracts of *New York Times* articles from 1969 to date, and selected data from some 60 other newspapers and journals. This file is growing

at the rate of 20,000 abstracts monthly and is extensively subject-coded for rapid and precise retrieval.

JURIS (JUSTICE RETRIEVAL AND INQUIRY SYSTEM)

The Department of Justice has made its Justice Retrieval and Inquiry System (JURIS) available to CRS without charge, with the Service paying only for the terminal located in its American Law Division. JURIS contains the full texts of the U.S. Constitution and U.S. Code (1970 Edition through Supplement II). Its content is currently being expanded to include the Public Laws of the 94th Congress, Supreme Court decisions of the past 25 years, various Solicitor General's briefs to the Supreme Court, and certain Tax Division memoranda. The data base can be searched by specific word or subject from cathode ray tube terminals or computer-driven typewriters. Associated printers provide copies of desired materials.

MEDLINE

MEDLINE is the automated bibliographic file series made available by the National Library of Medicine at the National Institutes of Health. It contains some 400,000 citations to materials from 1,200 journals covering the medical research and public health fields. MEDLINE data may be retrieved by either author or subject on all CRS typewriter terminals and on equipment in the Rayburn (House) and Russell (Senate) CRS Reference Centers.

Ad Hoc External Searches

The public market place offers dozens of retrieval systems, some by commercial groups and others operating on a not-for-profit basis. The CRS makes periodic use of some of these automated resources to augment the services just outlined. In past years CRS has conducted ad hoc searches through the Smithsonian Science Information Exchange, and in recent weeks has searched the Dissertation Abstracts and National Technical Information Service (NTIS) files. These searches have been initiated by subject researchers in answering congressional requests, and were implemented with the assistance of the Information Systems Group, which is also responsible for surveying the market for potentially useful automated information files.

ATS (Administrative Terminal System)

The Library possesses an internal data manipulation system, the Administrative Terminal System (ATS), which is used by CRS and certain congressional offices for editorial data handling. The Senate Committees on Agriculture and Forestry, and five other Senate committees are presently using this system to prepare legislative calendars. (Various House committees are served by the HIS computer in the same fashion.) Also, ATS sometimes is used by committees to sort material appearing in its committee prints. With CRS assistance, one committee used the device to analyze Presidential appointments by region, party, profession, and termination data. Another analyzed several thousand research and development grants, using the computer to sort them by amount, recipient college or university, geographical

region, and purpose. A third committee wished to identitfy interlocking directorates; by listing all members of corporate governing boards in the computer, it was possible to re-sort and identify which individuals served on multiple boards and which dealt with similar commodities or products of different corporate bodies.

The ATS capability is useful for storing materials requiring frequent update, such as lists of grant programs, terminating dates of legislated programs, and committee jurisdictions. CRS also uses it to transmit congressional inquiries among nearly 50 points of access within the Library and on Capitol Hill. Finally, it is used to help provide internal control of the daily CRS workflow.

External Data Manipulation Systems

The CRS services to Congress also benefit from the use of three external data manipulation systems.

SERVICE BUREAU CORPORATION (SBC)

The Service Bureau Corporation (SBC) was originally used to process data analysis programs, a system that included the program grants and expenditures of the Department of Health, Education, and Welfare, and that used a computer program to project the costs of veterans' benefits. Apart from these specialized functions, SBC offers data input and programming language capabilities. In one application some columnar fiscal data were keyed and stored in the SBC computer system long enough to write and execute computer programs that mathematically manipulated the data.

DATA RESOURCES, INC. (DRI)

Data Resources, Inc. offers a computer-based, large-scale econometric model of the U.S. economy as well as selected economic data for 1977 in such areas as consumer spending, automobiles, housing, and other topics of current national interest. An economist using the DRI system keys in "questions" and the system responds with relevant "answers," such as columnar quarter-by-quarter GNP forecasts. Model results can be obtained by using the system assumptions or different assumptions entered at the terminal. Auxiliary services include: a statistical time series capability, a statistical cross-sectional analysis capability, and an informational service providing releases and reports relating to changes in the news.

NATIONAL CENTER FOR EDUCATION STATISTICS (EDSTAT)

The Congressional Research Service has access to data collected by the National Center for Education Statistics (HEW) in its annual Higher Education General Information Surveys. Through the time-sharing computer system called EDSTAT, the Service may extract on an institution-by-institution basis data on student enrollments, expenditure and revenue statistics, the number and types of formal degrees awarded, and the characteristics of faculties. Survey results on vocational education also have been placed in the EDSTAT system.

Information Systems Group

The Information Systems Group is the ADP applications section of CRS. In addition to overseeing and monitoring the Service's automated applications program, as part of the Director's Office of Special Programs, ISG staff respond to a variety of automated tasks.

DATA BASE TRAINING

A primary mission of the ISG is the teaching of the use of online data bases. Training sessions in SCORPIO for both groups and individuals from CRS and congressional staffs are scheduled and conducted either in CRS or its chamber reference centers. Certain congressional and CRS staff also are trained to use the *New York Times* Info Bank, JURIS, and ATS. Demonstrations of these services are periodically revised. Training also is arranged for CRS personnel who need to use various external data bases ("models") and manipulation systems.

SPECIAL PROJECTS

ISG also provides systems analysis and computer programming for the Service's research divisions and in some cases directly to congressional offices. Many of these efforts involve data input and the manipulation of large volumes of information, while at the other extreme are more mundane tasks such as tape duplication. Several of the more ambitious ISG special projects over the past year provided keyword indexes to government publications, statistical reports, directories, and a hierarchical subject index.

Non-CRS Computer Service for Congress

INFORMATION SYSTEMS OFFICE

Computer Service Center

The series of automated services to the Congress, provided by the Library of Congress, as described above, depend on machine support located in the Information Systems Office Computer Service Center. The operation of a terminal located in a congressional office, for example, involves the activation of at least six elements, half hardware and half software. These are: the terminal (such as a Hazeltine 2000), telephone lines (from the terminal to the Library's computer), the computer system itself (either of two IBM 370/158's); the computer operating system software (IBM OS/VS1), data communications system software (CICS), and the information retrieval programs (SCORPIO). Successful use of remote terminals depends upon the meshing of all six basic elements, while a problem involving any one effects a "no-go" situation for the user at the terminal end.

SCORPIO

From the elements just identified, SCORPIO is worth highlighting. As discussed elsewhere in this report, this computer software was produced by the ISO Computer Applications Office. It is not an "off-the-shelf" vendor product, and for that reason can be tailored to meet the changing demands of a diverse user community. Past customer recom-

mendations, for example, have resulted in new SCORPIO commands, enhancements to the format of the data displayed, and an upgrading of retrieval power against a given file. The information files containing bill content and status data, bibliographic citations, and issue briefs, are the responsibility of CRS.

Computer Applications Support

In addition to SCORPIO, ISO provides systems analysis and computer programming support to the Congressional Research Service and thereby indirectly to Congress in other production applications areas where computer programs are executed on a periodic routine cycle. Software exists to update the Service's legislative files, produce the weekly SDI, and publish the Legislative Indexing Vocabulary. Other software has been created for special projects such as: the Senate Foreign Relations Committee's document control system; the prospective Bill Digest data transfer (to House Information Systems); CRS research divisional projects (e.g., special processing of ATS-stored data); and ad hoc congressional needs.

SCIENCE AND TECHNOLOGY DATA BASES

As already mentioned in this report, two Science and Technology scientific data bases are available for retrieval under SCORPIO. This means that congressional offices with on-line terminals linked to the Library may access the National Referral Center Master Resources file and Science and Technology Computerized Catalog data base. Some offices have been able to answer constituent mail with the assistance of these sources. The first file lists more than 11,000 descriptions of organizations that are qualified and willing to answer questions and provide information on virtually any topic in science, technology, and the social sciences. The second file offers citations of journals, books and encyclopedias.

MARC DATA BASES

The Processing Department's off-line MARC data base is the Library's central repository for selected bibliographic citations. As already noted, this file not only features content quantity (containing 600,000 references) but variety (having citations of books, serials, maps, films). CRS bibliographers may arrange to search this file for lengthy bibliographies on an overnight off-line basis. Complex ad hoc queries to honor congressional requests are processed by the MARC retriever computer program, the one used in searches of the CRS Bibliographic Citation File. A variation of this service yields monthly current awareness off-line searches by subject. More rapidly accessible is the on-line MARC file of citations to English language books from 1968 to the present, and more recent books in several languages.

LOAN DIVISION

Library of Congress books are sent to congressional offices through the Library's Loan Division. Such requests are expedited by the placement of an ATS terminal in that Division which is connected to the CRS network of Inquiry Control System terminals.

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VI. IMPROVED FUTURE SERVICES FOR THE CONGRESS

In its report accompanying the Legislative Reorganization Act of 1970, the House Committee on Rules enjoined CRS to "experiment and be innovative in carrying out their new as well as their older functions." Such experimentation and innovation must, of course, conform to two basic criteria: It must be directed to CRS' primary function of providing the Congress with analytical, research, and reference assistance in support of its legislative, oversight, and representative functions. And it should, to the maximum possible extent, be keyed directly to the expressed information needs of the Congress.

Recurring Information Requirements

Congressional information requirements have been the subject of many studies and reports. Among the most useful of these, as cited earlier, was a direct survey of Members conducted by the Special Subcommittee on Electrical and Mechanical Office Equipment of the Committee on House Administration in 1970. Another valuable study was conducted a year later by the General Accounting Office to determine requirements in the fiscal-budgetary area.

Although congressional information requirements were spelled out in considerable detail in these and other studies, several recurring items emerged as salient:

> Information covering national issues and possible alternative solutions was held out as the most pressing area in need of attention. Examples include the impact of proposed legislation on existing Federal law and programs and on the economy in general; the breakdown of this impact by congressional district; the availability of alternative sources of information; and the expansion of independent analytical capability. Although this type of information was urgently needed, at the time it was considered less susceptible to realization through the use of automation than a second general category of procedural information.
>
> Examples of badly-needed procedural information included bill status and content information, information about Federal grants, projects, loans, and contracts—broken down by congressional districts—and detailed analyses of Federal budgetary information.

CRS has based its plans for expanded automated and non-automated support of the Congress on these two general analytical and procedural categories for the immediate (Fiscal Year 1976 and Fiscal Year 1977) future.

Automated Support of the Congress

The CRS immediate objective in the field of automation is to improve the quality and timeliness of existing automated files in the

fields of legislative information, bibliographic information, and issue-policy analysis information; to facilitate and support the development and implementation of internal automated information systems for committees of the Senate and the House; to encourage the development of a capability within the CRS and the Library's Information Systems Office to provide appropriate automation support to the Congressional Budget Office; and to acquire and/or develop automated control of information on Federal grants, projects, loans, and contracts.

IMPROVEMENT IN EXISTING AUTOMATED FILES

The Bill Digest File

(1) Improve the timeliness of the acquisition and processing of information about bills and resolutions into the on-line file.

(2) Develop a system for the tracking of amendments.

(3) Revise and improve the indexing of bills in conjunction with the development of an expanded on-line Legislative Indexing Vocabulary and development of a text-search capability within the Library's SCORPIO retrieval system.

(4) Promote closer coordination between the House, the Senate, and the Library of Congress for the purpose of eliminating unnecessary duplication of effort in the processing and display of bill status and content information.

The Bibliographic Citation File

(1) Expand the present current-awareness Selective Dissemination of Information (SDI) profile system to include all Members of the House and the Senate.

(2) Improve the quality, timeliness, and cost-effectiveness of the provision of printed copies of articles cited in the SDI.

(3) Increase the scope of the bibliographic system to include the timely acquisition and processing of all major congressional reports as well as GAO reports and selected reports from the Executive branch. This processing will include the preparation of expanded indicative abstracts of these documents.

The Major Issues System.

(1) Expand the scope of the file to include continuing coverage of from 225 to 250 issue briefs.

(2) Improve the timeliness of the system to the point where each issue brief is updated as often as events dictate, and no brief is critically reviewed for timeliness less frequently than twice each month.

(3) Assume management and control of the printed product presently known as the MLC (*Major Legislation of the Congress*) and, through automation, produce this document as an ancillary product of the Major Issues System.

(4) Place the MLC on-line within the SCORPIO retrieval system where it will be available to Members and committees of the House and the Senate on a continuously updated basis.

(5) Through utilization of Computer Output Microfilm (COM) techniques, make entire sets of the Major Issues File available to congressional offices and offices in home districts in inexpensive microform.

NEW AUTOMATION EFFORTS IN DIRECT SUPPORT OF CONGRESS

(a) In collaboration with the Library's Information Systems Office, develop computer software to create an on-line file of an expanded and flexible Legislative Indexing Vocabulary. This will be fully cross-referenced and interwoven with the on-line legislative, bibliographic, and issue information files and will improve the ease with which these files may be searched and their contents more precisely retrieved.

(b) Expand the Legislative Indexing Vocabulary to the extent necessary to improve its usability as a complete and standard thesaurus for the indexing of all CRS legislative, bibliographic, and issue information data bases.

(c) In conjunction with improvement and on-line automation of the Legislative Indexing Vocabulary, develop a file-building and maintenance software capability to assist congressional committees in establishing and maintaining their own unique indexing vocabularies and retrieval systems applicable to committee files and correspondence.

(d) Acquire an existing data base, create a new one, or supplement an existing one for the purpose of maintaining an up-to-date file on information pertaining to Federal grants, projects, loans, and contracts.

(e) Develop or acquire the capability to provide appropriate assistance in automation to the Congressional Budget Office.

(f) Continue and intensify present efforts to systematically evaluate automated information files created elsewhere in government or in private industry for the purpose of selecting those suitable for acquisition by the Library in order to provide access to them by congressional offices and the Library's research staff.

(g) Develop word processing techniques which will enable congressional users to access various textual data bases and store the search query responses in a local word processing device. This device can then be used off-line for reprocessing of the stored data into reports, memoranda, or correspondence. Such manipulation of text into varied forms would significantly enhance the potential use of all textual data bases.

OTHER NEW SERVICES

Although the main thrust of this report is in the field of automation support for the Congress, some mention should be made of activities in process or under study which are designed to increase and improve non-automated services provided by the Congressional Research Service and which, in fact, comprise the vast majority of the total CRS services. These include plans for a limited program to recruit outstanding specialists from the academic and private community for short-term appointments in CRS, the establishment of a formal program to assign CRS subject specialists directly to congressional committees for limited periods of time, and the development of a more extensive capability to assist the Congress in evaluating and utilizing public opinion and other forms of survey research. Plans also include consideration of a program to assist in the training of new congressional staff members, development of shortcut methods for the more efficient preparation of responses to constituent mail, and the provision of consultative services for more effective Member utilization of the public mass media and the production and dis-

tribution of office newsletters. A more detailed description of these and other potential expanded services may be found in the CRS "Report Prepared for the House Commission on Information and Facilities," which was submitted to Representative Don Fuqua on July 16, 1975.

One new CRS activity of major potential importance deserves special mention. That is the current effort to develop a futures oriented information system for Congress.

FUTURES RESEARCH GROUP OF CRS

Futures Research—A new discipline emerging from the academic environment into the realm of public policy—is a combination of forecasting and long-range planning. It tries to identify alternative futures and to develop or identify systematic strategies through which these futures may be attained, or perhaps avoided.

Within Congress there seems to be a growing desire for better methods to anticipate and to influence future directions. This has been illustrated by a variety of developments, such as (a) OTA and its "early warning" functions established in 1972; (b) the House Committee Reform Amendments of 1974 (Bolling/Hansen amendments) which require all committees (except the Appropriations and Budget Committees) to undertake futures research on matters within their jurisdiction on a continuing basis; (c) the Congressional Budget and Impoundment Act of 1974, which requires the Federal budget, starting in fiscal year 1977, to include 5-year revenue and expense projections. This Act also established the Congressional Budget Office to supply recommendations to the Budget Committees and to assess the long-term budgetary impacts of new legislation; (d) the National Environmental Policy Act, which established the precept that an agency is responsible for future environmental impacts of its programs even if they fall beyond the agency's mandated area. This Act has led to the incorporation of social impact statements in some subsequent new laws, and to court tests of the Act itself.

The nature, volume, complexity, and rapid turnover of futures information call for systems which can access, store, retrieve, purge, and display selected items such as forecasts, trends, scenarios, future literature, and methodologies for additional studies and applications. Futures-oriented information systems could serve the Congress in many ways. Some major ones are:

1. To detect emerging and longer-term trends, issues, conditions, and interrelationships (early warning systems).
2. To identify future implications of present and proposed legislation.
3. To signal the need for wholly new legislation.
4. To prepare reports to constituents as well as speeches and other background reports looking toward the future.
5. To facilitate hearings by identifying possible themes, critical questions, and appropriate participants.
6. To assist the preparation of futures-oriented bills.
7. To check on the accuracy and reliability of futures information received by the Congress through other channels.
8. To interface with external information sources including on-line networks.

9. To prepare charts, tables, and narrative reports which signal significant events of potential future implications for Congress.

The Future Research Group of the Congressional Research Service is now working with private consultants in an effort to develop a comprehensive system capability. This effort calls for simultaneously obtaining comprehensive descriptions of current sources of futures information, and conducting a survey to identify specific congressional needs for such information. The latter task entails intensive interviews with Members of Congress, their staffs, committee staffs, and personnel in the offices associated with the Congress such as the Congressional Budget Office, the Office of Technology Assessment, and the Congressional Research Service. Identified needs for futures information will subsequently be compared with the types of information found to be already available. This comparison will suggest ways to acquire all available futures information and reduce the gaps between the information need and its availability.

Development and implementation of a futures information system clearly involves careful planning, expert knowledge, and sound management. It will also involve a balanced mix of skills and facilities relating to basic and applied research, communications, and automation.

Management of CRS Automation Support to the Congress

As indicated earlier, CRS presently provides two general categories of support to Congress in the fields of automation and information science.

The first category of support is provided by the Information Sciences Section of the CRS Science Policy Research Division. Headed by a Specialist in Information Sciences, this section is responsible for the provision of consultative services to Congress in the application of information sciences to congressional problems. It also produces evaluative and analytical reports in response to congressional requests, and conducts seminars and other programs for various Members and committees of Congress and other legislative agencies.

The other category of support is that of the development and implementation of such primary services to the Congress as automated information files in various subjects, assistance in automating procedures (for example, the preparation of committee calendars, the development and maintenance of internal automated files for committees, etc.), and the development of additional automated research applications for use by CRS analysts in their daily tasks of responding to congressional requests for assistance.

These activities are carried out by various operational units throughout CRS—for example, the legislative data base is a responsibility of the Legislative Documentation Section of the American Law Division. General managerial responsibility for further development, monitoring, and support of these automation activities at the Director's staff level is vested in the Chief, Office of Special Programs.

A detailed description of how these activities are organized is depicted in the chart in Appendix B entitled "CRS Organization for Automated Information Services."

VII. LIBRARY RELATIONSHIP TO OTHER LEGISLATIVE INFORMATION ACTIVITIES

Overview

Traditionally, the Library of Congress has fulfilled its support responsibilities, particularly through the Congressional Research Service and certain reference activities, by paying close attention to authorized, specific tasks. Library management, moreover, continues to express the belief that new initiatives and assignments as well as the expansion of established services must be responsive to the needs and requirements of the Congress. With the advent of information technology and the resulting variety of requests from Members and committees for technical assistance, this basic philosophy of responsive service has been closely adhered to.

As noted in earlier sections of this report, the Library has both the capability and the opportunity to render several types of support to individual Members, committees and subcommittees, and chamber elements with newly-assigned responsibilities for identifying information requirements and charting courses of action which would result in improved information products and services. In some instances, applications originally adapted to computer support (e.g., preparation of committee legislative calendars) by the CRS were then turned over for regular servicing to the proper chamber information group (e.g., House Information Systems). Or, continuing support in a data base preparation area—e.g., the furnishing by CRS of indexing terms for use in the House "bill status" system—has been provided. And finally, there are many one-time forms of assistance varying from consultation on committee questionnaires or alternatives for automating a key office file to undertaking a major study showing the utility of the information sciences in a given activity area (e.g., "Systems Technology and Judicial Administration").

Perhaps the most noteworthy consideration affecting *all* legislative branch information support groups today is the increased need for regular open communication concerning developmental plans and problems. The path of unilateral action in developing non-housekeeping services which have an impact across the legislative branch is too costly. Duplication of services is an indefensible luxury. Coordination of the (often interlocking) series of services to the Congress is becoming an imperative. Commentary on certain aspects of Library/CRS interfacing with other legislative branch organizations follows.

House of Representatives

Interaction between the Library and House information system developers began in the late 1960's. Scarce resources and limited official mandates helped spur mutual consideration of key problems. It was

learned early that the "how, why, when, where" of trying out new applications for ADP often were better resolved after a joint study of a proposed service innovation. A more structured approach to improving House information support was possible after the creation of the House Information Systems (HIS) office, which now has grouped its developmental activities into four application areas: legislative, committee, member, and administrative. Sustained scrutiny of the handling of content and status information on pending legislation continues, with an articulation of the need to avoid duplicative status "systems." A bit of background is useful at this point. The CRS, in fulfillment of a 1935 statutory directive, is charged with preparing legal "digests" and related "action" information. The Legislative Reorganization Act of 1970 requires CRS to track all expiring legislation and H. Res. 988 (93rd Congress) sets forth a new CRS task of preparing 100-word summaries of all pending bills and resolutions. As mentioned earlier, indexing terms for each bill are furnished both the CRS and House bill status data bases. Although both CRS and HIS collect status data, the latter's access to daily action on bills from the committees makes other acquisition of these data unnecessary. Here is a prime instance where a "shared" service with non-overlapping staff efforts parceled out could be evolved. Further, it showcases the growing need for a "management" mechanism for information support activities within the legislative branch. A most recent development allowing House Members to use clerk-hire funds (up to $1,000 per month) for "computer services" brings to reality, in the near future, a capability for congressional offices to have direct, multi-file access, drawing upon data stored in the House and Library computers. The impact of this development on existing Hill resources still is being assessed.

Senate

In 1970, the rationale for cooperation between the Library and the Senate Subcommittee on Computer Services was established by the late Senator B. Everett Jordan, Chairman of the Committee on Rules and Administration. Housekeeping chores, including addressing and mailing support for individual Members, were to be performed by the Senate computer. Guidelines governing the use of computer systems and services were delineated by the Senate Subcommittee on Computer Services, which would be responsible for approving in-house or contractor efforts resulting in improved services that involved the use of ADP and microform technology. The Library of Congress would be called upon for support in certain legislative services areas, especially where the involvement of research personnel was a factor. Videoscreen and typewriter terminals linked to the Library computer have been providing support on a priority-oriented basis for more than two years. Now that individual Senatorial offices have their own videoscreen units, there is renewed emphasis on upgrading computerized subject files and refining the software which allows Hill users to obtain desired information. Senate personnel also can acquire bill status information from the HIS office, and Senate committees have been asked to provide daily action information affecting bills within their purview. These applications suggest an additional area for potential unified planning and resource utilization.

General Accounting Office

Cooperation between the GAO and the Congressional Research Service was noticeably enhanced with the passage of P.L. 91-510. Frequent exchanges involving groups of key personnel have allowed a better understanding of missions, objectives, and the use of institutional resources. The GAO has been given access to such CRS computerized files as the issue brief, bill digest, and bibliographic (current awareness) data bases, including a terminal tied to the Library computer. It is anticipated that further interactions will be undertaken as a result of new file development and expanding user access (outside of the Library) to CRS data bases.

Government Printing Office

With an awareness of the GPO workload brought about by years of joint effort in publishing the *Digest of Public General Bills and Resolutions*, the CRS continues to encourage GPO utilization of electronic printing devices and techniques, microform production of documents, and the exploitation of Computer Output Microfilm (COM). Not only can production turn-around times be lessened, but users will be able to choose from among a range of "printed" forms. Participation by the GPO, as well as the GAO, in any legislative branch coordination advisory group would appear to be a prerequisite to its success.

Office of Technology Assessment

CRS assistance to OTA has taken more traditional forms thus far, although limited technical advice in the area of using information technology has been sought. The information support system of the future is projected to include expanded on-line computerized services—OTA now has four terminals accessing the Library computer—and several subject-oriented data files.

Congressional Budget Office

Currently assessing a recent report on the "Development of a Systems Concept—A Budget Information System," the CBO management must examine not only its own information requirements, but those of the other legislative branch elements comprising the fiscal-budgetary information handling community (e.g., both Budget Committees, both Appropriations Committees, etc.). Existing Hill and external resources—computer, personnel, special processing services—must be evaluated in terms of offering interim and longer term capabilities. At present, the Library/CRS resources likely to be drawn upon will include some possible use of the Library computer, staff assistance from CRS Economics Division personnel, and consultation regarding the use of econometric models. Technical assistance currently is being provided CBO by CRS in identifying applicable state-of-the-art technology and alternatives for action in the development of information support files and services.

This description of congressional information-handling organizations, with a special look at their salient activities and points of interface—both present and potential—suggests a movement that has

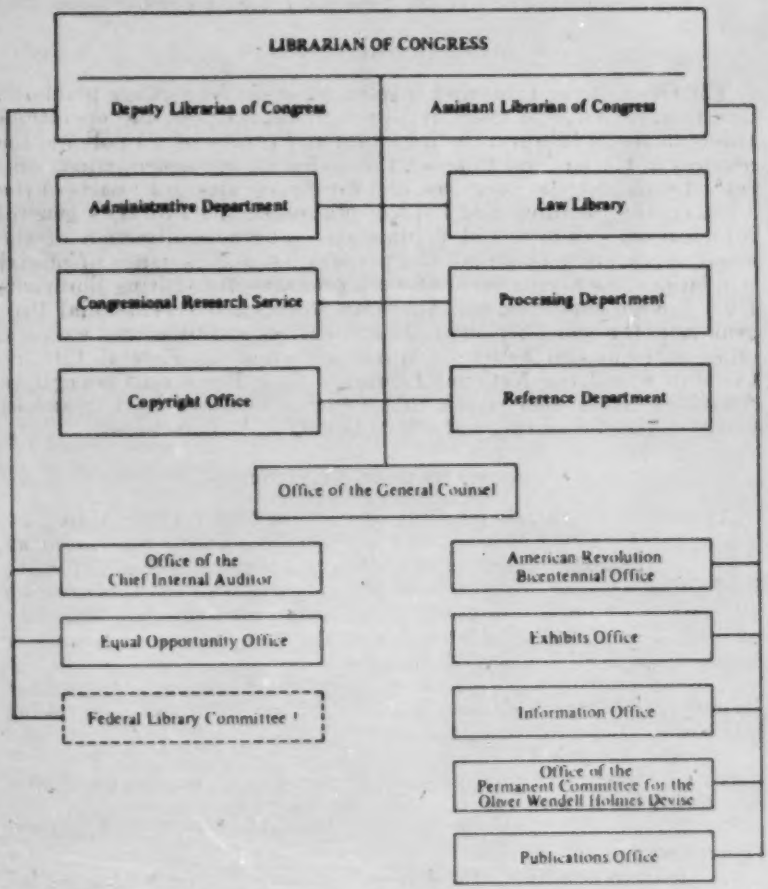
reached the threshold of maturity. The leadership and a significant number of Members of Congress not only are aware of the importance of information tools and techniques in their working environment, but see them as a useful adjunct to established rules and procedures. There is a balance yet to be identified and struck, but the requisite management and coordination of these new resources, undertaken at this time, can result in more responsive, effective functioning throughout the congressional community.

APPENDIXES

APPENDIX A

THE LIBRARY OF CONGRESS

Organization and Principal Functions



[1] Interagency committee chaired by the Librarian of Congress.

(51)

OFFICE OF THE LIBRARIAN

Organization and Principal Functions

Daniel J. Boorstin, *Librarian of Congress*
William J. Welsh, *Deputy Librarian of Congress*
Elizabeth Hamer Kegan, *Assistant Librarian of Congress*

OFFICE OF THE LIBRARIAN

The Office of the Librarian is responsible for long-range planning, direction, review, and audit of all programs, services, and operations throughout the Library, the initiation and review of all policies, the services of the General Counsel, the review of recommendations concerned with budgetary services, and work programs in all parts of the Library, the planning and implementation of the Library's general information, exhibits, and publications programs, direction of the equal opportunity program, the preparation and issuance of official regulations, the arrangement of work programs for visiting librarians from foreign countries, the American Revolution Bicentennial Program, and the coordination of library services and programs with the other national and Federal libraries through the Federal Library Committee and the National Libraries Task Force on Cooperative Activities. It is also responsible for representing the Library of Congress on a broad range of official boards and commissions.

DEPUTY LIBRARIAN OF CONGRESS

As provided in Section 1.A(2) of General Order 1709 (March 14, 1960), the Deputy Librarian of Congress shares with the Librarian the over-all administration of the Library, acting with final authority in specified areas of delegation, working closely with the Librarian on all matters of importance, and functioning with the full authority of the Librarian when the latter is unavailable by reason of absence or involvement in other official duties.

Without limiting this general authority to act for the Librarian, the Deputy Librarian of Congress is hereby delegated authority for taking final action on the following matters:

(a) Special project progress reports;

(b) Contracts and purchase orders for general procurement on a negotiated basis in excess of $1,000 and up to $2,500;

(c) Recommendations of the Bibliography and Publications Committee;

(d) Recommendations for disposal of materials no longer needed for the Library's collections;

(e) Travel authorizations, requests for travel at no expense to the Library, amendments to travel authorizations, and travel reports;

(f) Use of the Porter Fund for special purposes;

(g) Employee resignations;

(h) Conversion of appointments from conditional to permanent status;

(i) Personnel Action Recommendations except those on which final authority is delegated to the Director of Personnel or the Classification Officer, and except classification actions and appointments involving grade GS–13 and above;

(j) Approval of recommendations of staff officers or committees with respect to evaluation of Library materials;

(k) Approval of price increases for Library materials;

(l) Purchase orders for books or library materials of $250 or more;

(m) Reapportionment of funds, within limits that may be established by the Librarian, subsequent to initial apportionment of funds;

(n) Duty Officer reports;

(o) Review of performance ratings of division chiefs;

(p) In addition to duties and responsibilities enumerated above, the Deputy Librarian of Congress has undertaken coordination of the programs of the Library financed with gift and trust funds. In this capacity, he exercises general oversight over such programs, conferring with other Library officials on existing and proposed programs, monitoring their execution, and periodically examining the status of gift and trust funds to assure adequacy and appropriate utilization.

ASSISTANT LIBRARIAN OF CONGRESS

The Assistant Librarian will participate with the Librarian of Congress and the Deputy Librarian of Congress in the overall administration of the Library. The incumbent is assigned special responsibility in the following areas and will assume such additional duties as may be assigned from time to time by the Librarian or Deputy Librarian.

(1) Prepares and directs the preparation of documents explaining established policies and enunciating new ones, describing programs and plans, and responding to proposals made in regard to the Library and its role in the Government, in the library world, and in the scholarly and cultural life of the Nation.

(2) As assigned, analyzes and comments upon internal documents relating to administrative problems of the Library and recommends action to be taken thereon.

(3) Advises with key Library officials and participates in special conferences with them and with the Librarian.

(4) Confers with representatives of the Library and other professional and learned organizations on problems of mutual concern.

(5) Coordinates relations between the Library and the Congress (except for normal relations involved in providing research and reference service to Congress) with responsibility for reviewing the work of the Legislative Liaison Office.

(6) Serves as the Library's liaison officer with the White House and with commemorative boards and commissions and, as assigned, represents the Librarian at the meetings of such boards, commissions, and other organizations of which he is a member when he is unable to attend.

(7) Directs arrangements for major special events in the Library, or elsewhere, when the Library is a co-sponsor, unless otherwise assigned.

(8) Drafts or reviews drafts of all speeches, articles, and statements prepared for the Librarian's use.

(9) Directs and reviews the information, exhibits, and publications programs of the Library.

(10) In the absence of the Deputy Librarian of Congress, acts as Acting Director of the Library of Congress.

LEGISLATIVE LIAISON OFFICER

The Legislative Liaison Officer has special responsibility for maintaining liaison with Members and committees of Congress and their staffs. This officer reviews bills introduced to determine their importance to the Library of Congress and its public and to the library world and consults with congressional staff members with respect to legislation. Proposed legislation that is needed by the Library to carry out its programs is coordinated in this office. Such proposals are presented to the appropriate Members for introduction in the House and Senate, necessary statements are prepared or reviewed, and congressional action is monitored. Inquiries from Members relating to the Library (not research as performed by the Congressional Research Service) are referred to the Legislative Liaison Officer. The officer also consults with other Federal agencies and associations on legislative matters to coordinate efforts and to promote the welfare of the Library.

OFFICE OF THE CHIEF INTERNAL AUDITOR

Under the general direction of the Deputy Librarian, the Chief Internal Auditor is responsible for providing for the planning and implementation of audit programs throughout the Library. These include financial and management-operational type audits, and such other reviews and analyses as requested by management or determined by the auditor to be appropriate under the circumstances, including any or all of the following:

A. An examination of financial transactions, accounts, and reports to determine (1) whether financial operations are properly conducted, (2) whether the financial reports of the audited entity are presented fairly, and (3) whether the entity has complied with applicable laws and regulations.

B. A review of efficiency and economy in the use of resources to determine whether the entity is managing or utilizing its resources (such as personnel, property, and space) economically and efficiently and to recommend measures for correcting any inadequacies.

C. A review to determine whether desired results are effectively achieved, whether the objectives established by the Congress, Library management, or other authorizing bodies are being met, and whether the agency has considered alternative measures that might be more economical.

EQUAL OPPORTUNITY OFFICE

The Equal Opportunity Office shall be responsible for developing and executing the program and procedures for the resolution of complaints and charges of discrimination including the hearing proce-

dures. It shall operate under the general guidance of the Deputy Librarian of Congress, who provides direction to the Equal Opportunity Office Coordinator, who, in turn, directs the Equal Opportunity Office staff. Any conflicts which staff members may have between their duties as Equal Opportunity Officers and Counselors and their official positions shall be resolved by the Coordinator.

EXHIBITS OFFICE

Under the general direction of the Assistant Librarian, the Exhibits Officer develops proposals for exhibits for the entire Library.

FEDERAL LIBRARY COMMITTEE

The Committee shall on a Government-wide basis (1) consider policies and problems relating to Federal libraries, (2) evaluate existing Federal library programs and resources, (3) determine priorities among library issues requiring attention, (4) examine the organization and policies for acquiring, preserving, and making information available, (5) study the need for and potential of technological innovation in library practices, (6) study library budgeting and staffing problems, including the recruiting, education, training, and remuneration of librarians.

Within these areas the committee shall recommend policies and other measures (1) to achieve better utilization of Federal library resources and facilities, (2) to provide more effective planning, development, and operation of Federal libraries, (3) to promote optimum exchange of experience, skill, and resources among Federal libraries, and as a consequence, (4) to promote more effective service to the Nation at large.

The committee shall consider and recommend measures for the implementation of Federal library policies and programs, and shall serve as a forum for the communication of information among Federal librarians and library users.

OFFICE OF THE GENERAL COUNSEL

The Office serves as the legal adviser for all matters relating to the administration of the Library. Specifically, it is responsible for development and advice on all legal and related policy matters arising under the laws and regulations governing the administration and operation of the Library, including cooperative and other special programs, national and international.

INFORMATION OFFICE

Under the direction of the Assistant Librarian, the Office has responsibility for maintaining a central location for the issuance of general information regarding the Library's activities (including information contained in free publications) to visitors and callers, referring them when appropriate to other units of the Library; for assembling data for and preparing and issuing press releases and other notices of the Library's activities intended for publication; for providing liaison and making arrangements for contacts between mem-

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bers of the staff and representatives of the press; for maintaining a file of press clippings and other material relating to the activities of the Library; for maintaining a subject file of photographs of the Library for use in publications; for making arrangements for guided tours of the Library for foreign visitors and some other special groups; and for maintaining the general bulletin boards.

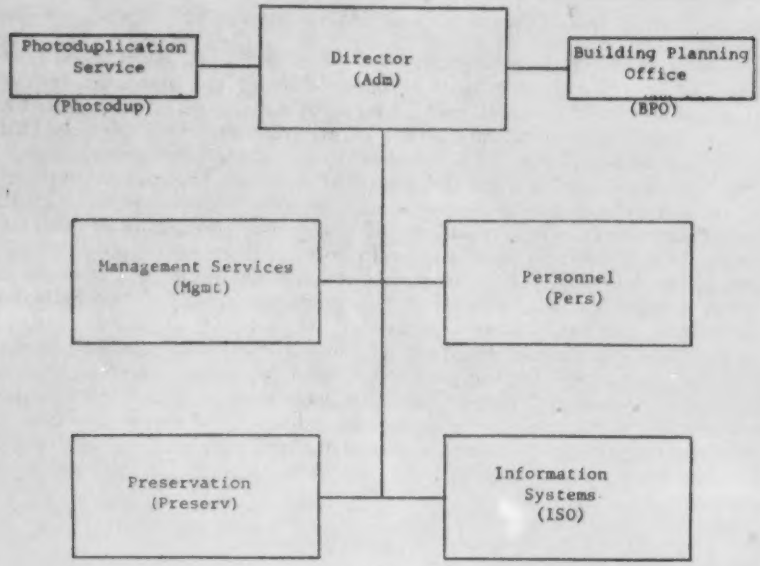
PERMANENT COMMITTEE FOR THE OLIVER WENDELL HOLMES DEVISE

The Holmes Devise History was authorized by Act of Congress to make appropriate use of the estate which the late Justice Holmes left to the United States on his death in 1935. Because of the war and other delays this bequest lay idle until 1955 when Congress passed P.L. 84–246 establishing a Permanent Committee for the Oliver Wendell Holmes Devise consisting of the Librarian of Congress as Chairman *ex officio* and four public members appointed by the President of the United States. The enabling act specified that the resources of the estate were to be used primarily for the preparation of a definitive history of the Supreme Court. Three volumes have been published and other volumes of the series are now in preparation.

PUBLICATIONS OFFICE

Under the direction of the Assistant Librarian, the Office has responsibility for conducting with the Government Printing Office on behalf of the Library all relations involved in the procurement of publications, except in those cases in which responsibility for specific publications or classes of publications has been delegated to other units of the Library; for assembling at periodic intervals as needed for the information of the Librarian and the Bibliography and Publications Committee data regarding the status, estimated cost, etc. of publications issued through all units of the Library; for preparing and submitting for the consideration of the Bibliography and Publications Committee a budget controlling Library publications, for keeping this budget current, and for advising the Bibliography and Publications Committee on the status of funds; for proposing allotments of the general publications funds (i.e., the funds not specifically delegated for control to another unit), securing estimates, preparing requisitions, and certifying vouchers; for calling to the attention of the Bibliography and Publications Committee any evidence of demand for new publications; for seeing through the press all publications, whether printed or processed, procured with general publication funds, determining, in consultation with the author and in accordance with recommendations of the Bibliography and Publications Committee, matters of format, layout, type, binding, number of copies, distribution, etc. The Publications Officer serves *ex officio* as a member of the Bibliography and Publications Committee.

ADMINISTRATIVE DEPARTMENT



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THE ADMINISTRATIVE DEPARTMENT

Organization and Major Functions

The Administrative Department is one of the six departments of the Library. The Department is responsible for the planning, implementation, direction, and coordination of all financial management, personnel management, and administrative management services and programs of the Library. Included are financial staff services (accounting, budgeting, and managerial-financial reporting); automation planning and automatic data processing services; acquisition, retention, motivation, development, and use of personnel; promotion of efficient paperwork practices; photostat and photoduplication service for Congress, the Library, other Government agencies, and for the general public; preservation, protection, and custodial treatment of Library materials; management, operation, and maintenance of Library buildings, leased space, and related equipment and facilities; administration of programs of safety, fire prevention, and physical protection of the Library, its staff and visitors, and its property; purchasing and contracting services; procurement of personal property and non-personal services (including printing, duplicating and publication services); procurement and utilization of transportation, public utilities, and communication services.

Office of the Director

F. E. Croxton, *Director*

The Office of the Director is responsible for the general administration of the Department, the planning and coordination of departmental programs, the coordination of work with other departments of the Library and liaison with Federal agencies and other organizations in matters concerning the work of the Department. The Director provides Library-wide leadership in administrative and other specialized functional areas; he assists the Library administration in the formulation and conduct of programs for improving the management and organization of the Library of Congress. The Building Planning Office and the Photoduplication Service are separate offices under the Office of the Director. The other activities of the Department are organized into four major areas: personnel management, management services, information systems development, and preservation of library materials. Responsibility for each of these areas is assigned to an Assistant Director serving under the general policy direction of the Director.

Building Planning Office

The Building Planning Officer is responsible for the coordination of planning activities related to the James Madison Memorial Build-

ing. These activities include: liaison with Library units scheduled to occupy the Madison Building, and with the Architect of the Capitol and the Associate Architects for the building, to insure that the building meets Library requirements; the conduct of necessary technical studies; the arrangement of interior space assigned to Library units; design control and recommendations covering functional requirements for furnishing and equipment; and the layout of interior furnishings and equipment.

PHOTODUPLICATION SERVICE

The Photoduplication Service is responsible for responding to requests for estimates, orders and information concerning photoreproductions of materials in the Library's collections; providing reference service for identifying and locating materials to be photocopied; providing photoduplicates in varied forms for Congress, the Library, other Government agencies, and for the general public; receipting and scheduling all monies intended for payment of photoduplication work; conducting large-scale cooperative microfilming projects, including participation in the Library's Preservation Programs for newspapers, brittle books, rarities, etc.; and custody and maintenance of the Library's master negative microfilm collection.

The Service provides technical support to units responsible for the acquisition of microforms for the collections; develops and manages cooperative filming projects of scholarly material in foreign countries; and represents the Library of Congress in the development of national and international standards concerned with the photoreproduction of library materials.

INFORMATION SYSTEMS OFFICE

The Information Systems Office is responsible for the development and implementation of the Library's program to utilize modern electronic equipment and techniques in the Library's administrative operations except for the core bibliographic system assigned to the MARC Development Office, Processing Department. The Assistant Director for Information Systems Development directs the activities of the Office and is the principal adviser to the Librarian of Congress and the Director of the Administrative Department on matters involving the application and use of computers and automated techniques. He reports to the Department Director and through him to the Librarian of Congress. The Technical Coordination Group, part of the Office of the Assistant Director, makes long-range plans, develops proposals for automation application, recommends priorities based on technical and economic judgments, reviews and coordinates projects and programs, giving advice and assuring that projects plans meet broad goals, that both long-range and intermediate objectives are met, and that computer and peripheral equipment is properly considered, procured, and phased into the operation. The Group maintains liaison with the national and international community in regard to automation.

COMPUTER APPLICATIONS OFFICE

The Computer Applications Office performs systems analysis and feasibility studies for computer applications within the Library mis-

sion as well as developing, testing, and maintaining the necessary applications programs and documentation. It operates through project managers who are responsible for groups of functionally related projects. It supports the requirements of the Congressional Research Service, the Copyright Office, the Law Library and the Reference and Administrative Departments.

SYSTEMS DEVELOPMENT AND STANDARDS OFFICE

The Systems Development and Standards Office develops and maintains the software environment available to Library of Congress applications and research; develops, tests, and accepts operating systems, initiates general computer programs, and prepares standards to be used in all programs written in and for the Library; maintains controls to assure that documentation and operating procedures conform to established standards; and conducts or obtains specialized professional computer training for appropriate Library personnel.

COMPUTER SERVICE CENTER

The Computer Service Center specifies, operates, and controls computer and related equipment in the Library, including the Library's central computer facility and connected telecommunication services; schedules and controls all work entering and leaving the machine area and maintains current and non-current files of computer data and programs; specifies for procurement all electronic data processing and peripheral equipment for the Library and participates and reports on the status of negotiations as required.

MANAGEMENT SERVICES

The Office of the Assistant Director for Management Services is responsible for coordinating the activities of the divisions engaged in managing financial and material resources and in providing services required to support the operations of the Library (Buildings Management Office, Central Services Division, Financial Management Office, and Procurement and Supply Division); assists in the area of management and organization, systems analysis and planning, surveys and studies, application of business machines and automatic data processing systems, work management, work simplification methods, and management improvement services; and conducts the staff aspects of the safety and emergency preparedness program of the Library.

BUILDINGS MANAGEMENT OFFICE

The Chief, Buildings Management Office, directs and coordinates the management, operation, and maintenance of Library buildings, leased space, and related equipment and facilities; responsible for overall space planning for existing Library buildings, including rented space. He also plans and directs the functions of the two sections of the Office, the Building Services Section and the Special Police Force.

BUILDING SERVICES SECTION

The Building Services Section is responsible for cleaning, labor, and janitorial services, including elevator and checkstand services, and grounds maintenance.

PROTECTIVE SERVICES SECTION

The Protective Services Section is responsible for preventing and controlling real and personal property loss or damage by fire, storm, and theft, or results from actions contrary to either Federal laws, or to regulations prescribed by the Librarian, and for providing physical protection for employees and others using Library facilities. The Section functions through the Library Special Police Force with respect to providing required police protection.

CENTRAL SERVICES DIVISION

The Central Services Division is responsible for the receipt, routing, and dispatch of mail; maintenance of the Central Files of the Library; provision of local transportation services required by the Library staff; preparation of camera copy, reproduction by offset method, assembling and disseminating of administrative issuances and near-print publications; distribution of publications and maintenance of stock and mailing lists; maintenance of the official list of officers of the Library; and the operation of the Library's telecommunications services. The Division has Library-wide responsibility for the organization, maintenance, and disposition of official records; design and inventory of forms; and conduct of surveys and studies to improve management of official records. The Chief is the records officer of the Library, is the custodian of the Library's official seals, provides liaison between congressional offices and the Library on paperwork management matters and related problems, and plans and directs the functions of the three sections of the Division: the Administrative Services, Paperwork Management, and Printing and Processing Sections.

ADMINISTRATIVE SERVICES SECTION

The Administrative Services Section is responsible for mail processing operations, including receiving, sorting, opening, routing, distributing, delivery, control, pickup and dispatching of mail; maintains and services the Library's central files; operates the central CENTREX telephone system; and provides Government-owned motor vehicle services for official purposes.

PAPERWORK MANAGEMENT SECTION

The Paperwork Management Section surveys, analyzes, and evaluates the Library's paperwork management activities; assists in developing and improving records management including forms control and design, assuring the maintenance and security of records of continuing value and facilitating the segregation and disposal of records of temporary value; and upon request, assists congressional offices in the organization, maintenance and disposition of records.

PRINTING AND PROCESSING SECTION

The Printing and Processing Section is responsible for providing cold type printing services, including composition work and in-house processing by the offset method of printing, and for distributing Library publications.

FINANCIAL MANAGEMENT OFFICE

The Chief, Financial Management Office, is concerned with all fiscal activities of the Library, including budgeting, accounting, disbursing, financial, statistical, and progress reporting. He has responsibility for developing, coordinating, and maintaining the integrated system of financial staff services as well as for the general direction of the functions and activities of the Accounting, Budget, and Disbursing Offices.

ACCOUNTING OFFICE

Responsible for maintenance of the central system of budgetary control, receipt, and expenditure accounts for all funds available to the Library; review and approval of vouchers and payrolls for payment; maintenance of retirement records, individual pay records of employees, Health Benefits and Group Life Insurance records and Savings Bond records; rendering financial statements; maintaining control of Card Division and Copyright Office business; and is responsible for income tax withholdings, compilation of claims for unemployment compensation, and tax levies filed against employees.

BUDGET OFFICE

Bears the major responsibility for formulating budget policy within the overall Library policy framework and for devising and executing the budget program; provides budget service to the Library and is responsible for the day-to-day supervision of all budget operations irrespective of the source of funds, and for other related functions such as preparation of budget reports. The Budget Officer also serves as deputy to the Chief, Financial Management Office.

DISBURSING OFFICE

Responsible for the disbursement of all funds and the receipt of all cash collections of the Library, whether handled within or outside of the Office, except for such cash disbursements and collections as are handled under the direct responsibility of the Register of Copyrights; the deposit of receipts in the Treasury and the transfer of funds from special deposit accounts to trust and general fund accounts in accordance with advice received from the Accounting Office; the disbursement of cash on the basis of approved vouchers and payrolls received from the Accounting Office; maintenance of cash accounts; and preparation of statements of monthly accounts current.

PROCUREMENT AND SUPPLY DIVISION

The Procurement and Supply Division is responsible for planning and implementing policies and programs concerning the Library's

procurement and materiel activities, exclusive of those connected with the procurement and management of materials for the Library's collections, for the exchange programs, or for reference use. The Division is responsible for providing a comprehensive program for centralized purchasing and contracting services for all Library organizations; for performing or coordinating the receipt and distribution of all equipment, supplies and other materials procured by the Library; for managing Library storage operations; for managing and operating programs for rehabilitation of in-use and excess property; and for managing the "housekeeping" supply operations of the Library. The organization of the Procurement and Supply Division includes the Office of the Chief, the Procurement Section, the Materiel Section, and the Receiving Section.

The Office of the Chief of the Procurement and Supply Division has responsibility for the full range of functions related to contracts and procurements including product and service improvement studies. Contracting officers officially representing the Library on continuing contracts are located in this office.

PROCUREMENT SECTION

The Procurement Section is responsible for executing and administering contractual agreements and purchase orders with suppliers, evaluating vendor proposals and qualifications, and purchasing services, supplies, equipment, and other materials through formal or negotiated procurement procedures. It also processes the procurement of printed matter from the Government Printing Office and outside vendors.

MATERIEL SECTION

The Materiel Section is responsible for storing and maintaining an inventory of equipment, supplies and other materials to meet the Library's normal requirements and also for the maintenance, repair and disposal of these items. It also controls the bulk storage of all items in the Library excluding those items which are or may become part of the Library's collections.

RECEIVING SECTION

The Receiving Section is responsible for performing or coordinating the receipt of all equipment, supplies, and other materials procured by the Library. It is also responsible for coordinating the distribution of these items to the requesting Library organizational units.

PERSONNEL

The Office of the Assistant Director for Personnel is responsible for all offices engaged in directing and coordinating the Library's personnel management program. The Assistant Director, who is the agency Director of Personnel, represents the Librarian in personnel matters, develops, implements, and reviews the Library's personnel program; carries out certain control functions; assists and services the Library's constituent activities; and serves as the Library's liaison officer with the Civil Service Commission and other Federal agencies in personnel matters. Develops plans for more effective utilization of

the Library's manpower resources, and for coordinating the planning of the Library's intermediate and long-range staffing needs. The Assistant Director of Personnel for Equality Programs conceives, develops, coordinates, and monitors the Library's Affirmative Action Plan. The Labor-Management Relations and Appeals Officer represents management in Labor-management relationships, including serving as its counsel and participating in hearings and other administrative proceedings. The Classification Appeals Officer receives, investigates, and resolves position classification appeals in the Library.

EMPLOYEE RELATIONS OFFICE

Responsible for the coordination and implementation of the Library's established employee-management cooperation program, and for developing and maintaining a climate of cooperative relationships within the Library which will contribute to satisfactory working relationships, motivation, morale, and productivity. The Office advises or represents management in the recognition of, formal consultation or negotiation with, employee organizations other than those seeking exclusive representation status; it provides central administrative direction and review for the Library's incentive awards program.

Responsible for the administration of the Library's occupational health program, which is established to promote and contribute to the maintenance of the medical fitness of Library employees and provide for emergency care of staff and visitors to the Library who become ill or injured while on Library premises, for the conduct of other aspect of the health services program, and for implementation of the Library's medical alert and related programs.

PERSONNEL OPERATIONS OFFICE

Responsible for the administration of the laws and regulations pertaining to leave, retirement, health and life insurance, pay administration, performance ratings, and personnel regulations pertaining to overseas staff; for providing advice to operating and administrative officials and to employees concerning employee benefits and rights and interpretations of governing laws and regulations; for maintaining official personnel folders for the Library's staff, the Library position control file, and other personnel records; and for processing personnel actions and other official personnel documents.

PERSONNEL SECURITY OFFICE

Responsible for establishing and maintaining an effective program to insure that the employment and retention in employment of Library employees are clearly consistent with the interests of national security in conformance with the provisions of Executive Order 10450.

PLACEMENT AND CLASSIFICATION OFFICE

Responsible for developing and carrying out recruitment programs tailored to the Library's staffing needs; for examining the qualifications of applicants for employment to determine eligibility for particular positions; for developing and applying promotion requirements

throughout the Library; for evaluating placements aimed at improving selection and utilization of Library personnel; for administering the position classification system for Library positions which are subject to the Classification Act of 1949, as amended, and for other positions subject to the Coordinated Federal Wage System or other established systems; and for insuring compliance with governing laws and authorities and with applicable regulations and standards published by the Civil Service Commission.

TRAINING OFFICE

Responsible for the administration of the provisions of the Government Employee's Training Act of 1958 as it applies to the Library's needs for orientation and training of its staff members to keep current with advancing state-of-the-art, work-related technical training, in-service functional courses, self-development encouragement and counseling, and supervisor/executive management training.

PRESERVATION

The Office of the Assistant Director for Preservation is responsible for all offices engaged in directing and coordinating activities throughout the Library relating to the preservation, protection, maintenance, and restoration of all Library materials and collection with the exception of motion picture films and sound recordings. In addition, this office coordinates and develops proposals for the Library's centralized budget for all preservation activities.

BINDING OFFICE

The Binding Office is responsible for the conduct and management of the Library's program for the binding and rebinding of Library materials, the development of specifications, the evaluation and selection of qualified bidders, the systematic survey of the general collections for rebinding, the preparation of specific items for transmittal to the binder, and inspection of results. It also prepares newly cataloged books for the shelf by labelling and plating when binding is not required.

COLLECTIONS MAINTENANCE OFFICE

The Collections Maintenance Office is responsible for the physical care and maintenance of the collections, including the routine cleaning of the collections, and for scheduling and carrying out the treatment of leatherbound materials. As required, develops recommendations covering special conditions for the proper storage of Library materials; monitors environmental conditions in all stack areas, insofar as these relate to preservation; and makes recommendations for building or bookstack modifications to promote the preservation of Library materials.

PRESERVATION MICROFILMING OFFICE

The Preservation Microfilming Office is responsible for the conduct and management of the Library's program to preserve by microfilming and, when necessary, arrange for or make recommendations for the

repair, or replacement or disposal of deteriorated, damaged, and mutilated materials. This Office is also responsible for maintaining liaison with Library of Congress units and other libraries engaged in programs to preserve Library materials by microfilming.

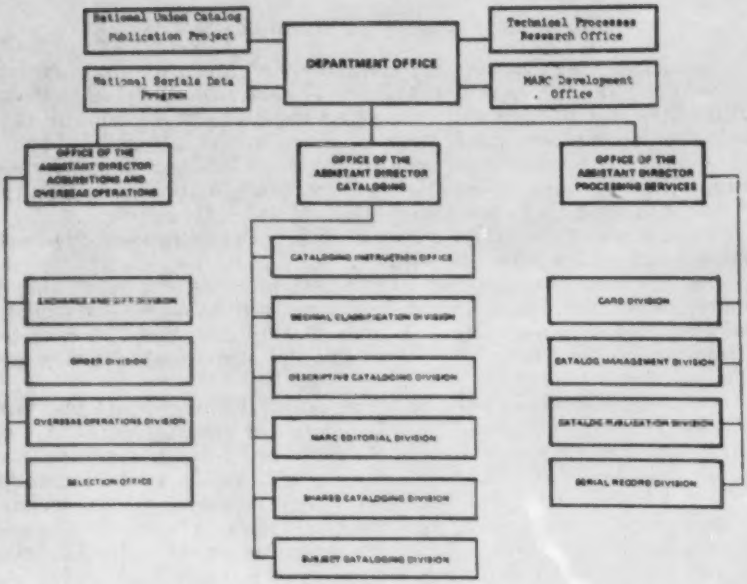
PRESERVATION RESEARCH AND TESTING OFFICE

The Preservation Research and Testing Office is responsible for the conduct and management of a broad-based research program covering the permanence, durability, preservation, and restoration of all types of Library materials. This office also tests, as required, and maintains quality control over supplies and materials used in, or related to, the restoration and preservation of Library materials.

RESTORATION OFFICE

The Restoration Office is responsible for the preservation and restoration of all Library materials, including rare books, manuscripts, works of art on paper and photographs, maps, newspapers, the general book collections, and all non-book materials. This Office is also responsible for the investigation and development of new and advanced techniques in the restoration and conservation of Library materials.

PROCESSING DEPARTMENT



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THE PROCESSING DEPARTMENT

Organization and Principal Functions

The Processing Department consists of eighteen major organizational units and fifteen overseas offices. The activities of these divisions and offices encompass a wide variety of responsibilities, including the selection, acquisition, and bibliographic control of materials added to the Library's collections and the distribution of bibliographic information to libraries and information centers throughout the world, in the form of printed cards, published catalogs, and magnetic tape.

A summary of the major responsibilities of the Processing Department may be summarized as follows:

(a) Acquiring approximately five million books and other library materials by gift, by copyright, by purchase from over 1,000 dealers, by exchange arrangements with over 20,000 institutions, by transfer from other Government agencies, and by provision of State and Federal law.

(b) Administering the Library's responsibilities under Public Law 83–480 (the Agricultural Trade Development and Assistance Act of 1954) by acquiring with United States-owned foreign currencies for other American libraries 1,500,000 pieces of library material annually.

(c) Administering the National Program for Acquisitions and Cataloging to acquire all current materials of value to scholarship and distribute bibilographic information regarding them to other libraries.

(d) Cataloging, classifying, assigning subject headings, and otherwise preparing the publications in approximately 468 languages which are acquired for use by the Congress, Federal agencies, other libraries, and the general public.

(e) Maintaining and developing the Library of Congress and Dewey Decimal Classification schemes.

(f) Operating the self-supporting Card Distribution Service which sells MARC tapes, proofsheets, book catalogs, technical publications, and millions of printed catalog cards a year to cover 20,000 subscribers.

(g) Supplementing and maintaining the Library's card catalogs containing over 50 million cards.

(h) Preparing for publication the hundreds of volumes of book catalogs which comprise the American national bibliography.

(i) Preparing a national bibliographic data base in machine-readable form.

OFFICE OF THE DIRECTOR

Edmond L. Applebaum, *Acting Director*

The Director of the Processing Department is responsible for planning and coordinating the activities of the Department. Three Assistant Directors work with him in carrying out the principal functions—acquisitions and overseas operations, cataloging, and processing ser-

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vices. The Technical and the Executive Officers report directly to the Director as does the MARC Development Office, the National Serials Data Program, the National Union Catalog Publication Project, and the Technical Processes Research Office.

MARC DEVELOPMENT OFFICE

The MARC Development Office is responsible for all aspects of the development and implementation of systems for recording cataloging data in machine-readable form (MARC), for using those records to produce book catalogs, special listings, and other printed output, and for developing applications of these records to internal bibliographic controls.

NATIONAL UNION CATALOG PUBLICATION PROJECT

The National Union Catalog Publication Project was established in 1967 for the specific purpose of editing for publication the *National Union Catalog of Pre-1956 Imprints*, a file of approximately 20 million catalog cards reporting holdings of the Library of Congress and over 600 major U.S. and Canadian libraries for works publishlished before 1956. This has resulted in the publication of the *National Union Catalog of Pre-1956 Imprints* which is the largest bibliography ever undertaken. The completed main set is expected to contain about 600 volumes.

TECHNICAL PROCESSES RESEARCH OFFICE

The Technical Processes Research Office plans and administers investigations of the Library's methods of catalog control such as descriptive cataloging, classification, subject analysis, indexing, and file arrangement, with special emphasis on how they may be affected by automation. The studies are designed to evaluate the individual methods within the context of catalog control as an integrated process, to suggest improvements, and to provide a sound basis for automating these functions.

OFFICE OF THE ASSISTANT DIRECTOR

(Acquisitions and Overseas Operations)

EXCHANGE AND GIFT DIVISION

The Exchange and Gift Division obtains library materials available by means other than purchase. An average of from five to seven million items annually are acquired through its various programs, including exchanges with over 16,000 institutions throughout the world, gifts from individuals and organizations, and receipts under special provisions of the law, including publications issued by the Superintendent of Documents (Government Printing Office), those deposited under copyright regulations, and those transferred from other Government sources. The exchange program centers on reciprocal arrangements with governmental organizations and scholarly institutions. Special collections such as personal papers and manuscripts are prominent among the gifts. The acquisition of U.S. Federal and State publications also entails review and selection of such publications for perma-

nent retention by the Library and the preparation of two publications, the *Monthly Checklist of State Publications* and the annual *Non-GPO Imprints Checklist*. The Division is also responsible for the custody and disposal of all surplus materials.

ORDER DIVISION

The Order Division is responsible for purchasing materials added to the Library's collections as well as publications required for priced exchange arrangements with foreign institutions. Purchases are made from book allotments in over 40 appropriated, gift and trust funds. More than 250 blanket orders have been established to acquire currently published monographs and related materials, and in excess of 30,000 subscription orders for serials and periodicals are maintained throughout the world. The Division deals with more than 5,000 book dealers, publishers, and other suppliers. Approximately one million pieces are acquired by the Order Division each year with payments exceeding 2½ million dollars.

The Principal Evaluations Officer in the Order Division reviews prices quoted for the more expensive items to be ordered, evaluates gifts to the Library, recommends insurance values on materials lent by the Library, and provides other reference services to appropriate offices.

OVERSEAS OPERATIONS DIVISION

The Overseas Operations Division administers the Library's foreign field operations established under the National Program for Acquisitions and Cataloging (NPAC), and the Public Law 480 Program. The latter program utilizes U.S.-owned foreign currencies to buy and distribute multiple copies of new foreign publications for LC and some three dozen other American research libraries. Under NPAC the Library is responsible for the rapid acquisition and cataloging of important current library materials published throughout the world.

SELECTION OFFICE

The Selection Office examines incoming book, pamphlet, and serial material (except those in Oriental languages) and determines which titles and how many copies should be added to the permanent collections of the Library. The Office further determines the type of processing to be given and the assignment of appropriate cataloging priorities to those items which will receive full Library of Congress printed card cataloging. More than 600,000 books and pamphlets and 18,000 new serial titles are reviewed each year by the Selection Officers.

OFFICE OF THE ASSISTANT DIRECTOR

(Cataloging)

CATALOGING INSTRUCTION OFFICE

The Cataloging Instruction Office is responsible for providing internal instruction through courses in cataloging, searching, and filing

as a means of developing staff in the Processing Department and other departments of the Library for professional and paraprofessional assignments and improving performance in present assignments.

DECIMAL CLASSIFICATION DIVISION

The Decimal Classification Division is responsible for developing, continuously revising, and preparing for publication the Dewey Decimal Classification in full and abridged editions; for advising on the preparation of special editions and translations; for classing titles in the major Western European languages according to the Dewey system; and for guidance, on a world-wide basis, in the interpretation and use of the system.

DESCRIPTIVE CATALOGING DIVISION

The Descriptive Cataloging Division is responsible for searching material in all languages; for preparing preliminary catalog entries for works new to the collections; for determining the authorship of materials and preparing that part of the catalog entry concerning the bibliographic and physical description of a work and the name and title entries required to locate a work in the catalog; for developing and revising the cataloging rules and romanization schemes under the supervision of the Assistant Director (Cataloging) and in cooperation with other authors of the cataloging code; and for providing final interpretation of cataloging rules and policies for all divisions involved in descriptive cataloging for printed cards.

MARC EDITORIAL DIVISION

The MARC Editorial Division is responsible for converting cataloging data to machine-readable form; for maintaining the Library's machine-readable files of cataloging data; for preparing, transcribing, proofing, correcting, and verifying cataloging data for input to a store of approved machine-readable cataloging records; for updating the Library's machine-readable cataloging files to reflect the most current data; for developing data conversion rules and procedures for MARC records; and for maintaining statistical records concerning the processing, growth, and maintenance of the Library's machine-readable cataloging files.

SHARED CATALOGING DIVISION

The Shared Cataloging Division is responsible for searching materials received from the Library of Congress NPAC overseas offices or other NPAC sources of supply, for adapting bibliographic cataloging information received from various foreign national bibliographies, and for determining the main and added entries for new works. The Division is also responsible for receiving order slips from cooperating research libraries, searching them to determine their status, and initiating orders for the works not already in the Library of Congress or on order, and for maintaining acquisition control files of publications on order, received, or in process.

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SUBJECT CATALOGING DIVISION

The Subject Cataloging Division is responsible for developing, continuously revising, and publishing the Library of Congress classification schedules and subject headings list; for applying these two control instruments to all works being added to the Library's classified collections (except maps and music); and for applying subject headings to children's literature and providing annotations for such works. The Division is also responsible for maintaining the shelflist, the Library's permanent inventory record, in classed order, of all works in the classified collections.

OFFICE OF THE ASSISTANT DIRECTOR

(Processing Services)

CARD DIVISION

The Card Division is responsible for having cards printed and supplied to the Library of Congress and other libraries but it also sells bibliographic data in the form of proofsheets, printed cards, machine-readable (MARC) tapes, book catalogs, and technical publications to libraries, learned societies, professional institutions, Government agencies, private institutions, and cooperative and commercial processing centers. It maintains the master bibliographic data base for the sale of all of the Library's cataloging and maintains the data base. As the business has become more complex, it has had to develop unique mechanized and automated techniques and equipment. It is the first source of most of the cataloging information in this country and must always be the court of last resort for seldom used records.

CATALOG MANAGEMENT DIVISION

The Catalog Management Division plans, organizes, and maintains the general card catalogs of the Library: the Main Catalog, the General Serials Catalog, the Official Catalog, the Annex Serials Catalog, the National Union Catalog of Manuscript Collections, the Far Eastern Languages Catalog, the Law Catalog, the Music Catalog, the Catalog of Juvenile Books, and other special card catalogs as assigned. The Division also prepares card catalog entries for special catalogs and files maintained by other divisions of the Library, coordinating them with the Library's general card catalogs. It is responsible for planning the structure of and editing the Library's general card catalogs, developing rules for their organization and aids for their use, and providing for their physical growth and development. It maintains statistical records concerning the content and growth of the Library's general and special card catalogs. The Division provides reference service concerning the receipt and location of materials in the Library through its Process Information File.

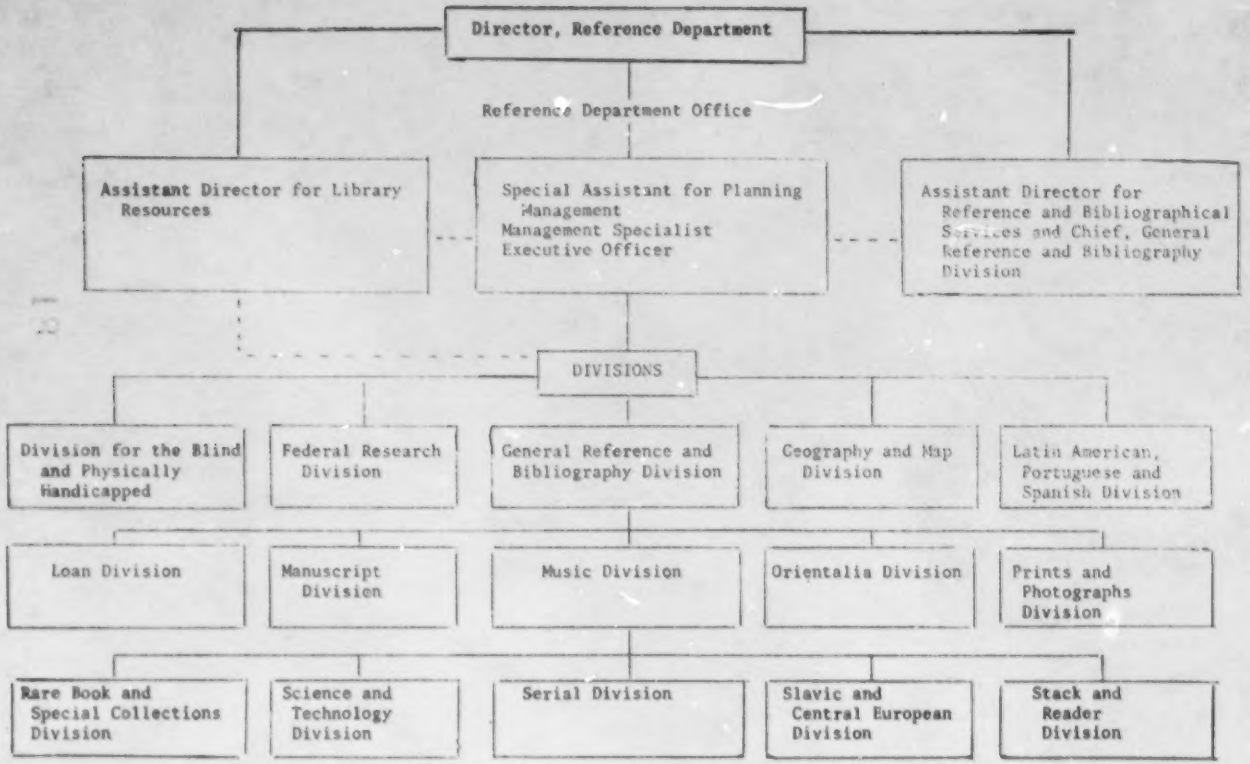
CATALOG PUBLICATION DIVISION

The Catalog Publication Division plans, compiles, edits, and prepares for publication the comprehensive book catalogs which form the

National Union Catalog and other Library of Congress book catalogs including Books; Subjects; Music, Books on Music, and Sound Recordings (formerly Motion Pictures and Filmstrips); the National Register of Microform Masters; Newspapers in Microform (formerly Newspapers on Microfilm); Symbols of American Libraries; Library of Congress Name Headings with References; and the Monographic Series. It edits and prepares for publication miscellaneous catalogs and indexes in cooperation with other divisions of the Library, by arrangement with other Government agencies, and by contract with professional organizations or commercial publishers. It is the official liaison with other libraries on matters relating to the requirements for reporting to the National Union Catalog. It serves as a clearinghouse for microfilming programs and for the development of national registers of certain materials.

SERIAL RECORD DIVISION

The Serial Record Division is responsible for maintaining the record of the Library's serial holdings in the Roman, Greek, Hebraic, and Cyrillic alphabets (exclusive of newspapers). It receives about 6,000 serials each working day which are searched, recorded, and distributed to the public reference divisions or to the classified collections or circulated to more than 100 units in the Library. Out of about 18,000 serials which are identified as new to the Library each year, about 10,000 are selected for retention and so are fully cataloged. All new titles are listed in New Serial Titles, which is a union list. It provides a reference service in response to questions from Library staff and other Government agencies which can be answered from its files.


Director, Reference Department
Reference Department Office
Assistant Director for Library Resources
Special Assistant for Planning
Management
Management Specialist
Executive Officer
Assistant Director for Reference and Bibliographical Services and Chief, General Reference and Bibliography Division
DIVISIONS
Division for the Blind and Physically Handicapped
Federal Research Division
General Reference and Bibliography Division
Geography and Map Division
Latin American, Portuguese and Spanish Division
Loan Division
Manuscript Division
Music Division
Orientalia Division
Prints and Photographs Division
Rare Book and Special Collections Division
Science and Technology Division
Serial Division
Slavic and Central European Division
Stack and Reader Division

THE REFERENCE DEPARTMENT

Organization and Principal Functions

The Reference Department consists of the following 15 divisions: Division for the Blind and Physically Handicapped (DBPH), Federal Research (FRD), General Reference and Bibliography (GR&B), Geography and Map (G&M), Latin American, Portuguese, and Spanish (LAPS), Loan (Loan), Manuscript (Mss), Music (Mus), Orientalia (Orien), Prints and Photographs (P&P), Rare Book and Special Collections (Rare Bk), Science and Technology (Sci), Serial (Se), Slavic and Central European (Slav D), Stack and Reader (S&R). The activities of these divisions and their staff members encompass a wide variety of reference, bibliographic, research, acquisitions, and custodial responsibilities. Bibliographies and other publications produced by the Department are listed in Library of Congress Publications in Print.

The major activities of the Reference Department may be summarized as follows:

(a) Custody and user service of the collections, excepting those in the custody of the Law Library.

(b) Reference and bibliographic service in all major subjects, excepting law.

(c) Operation of the Library's two general reading rooms and 12 other specialized reading rooms.

(d) Interlibrary loan.

(e) Development of the general and specialized collections of the Library, except law, in cooperation with the Processing Department, through the formulation of the Library's Acquisitions Policies, the recommending of current and non-current materials, and the search for sources of gift materials and their solicitation.

(f) Field trips within the United States and abroad in connection with the Library's acquisitions programs.

(g) Organization of the collections, in cooperation with the Processing Department, and establishment of bibliographic control or other means of access for special format material.

(h) Participation in national and international conferences of direct interest to the Library and its activities.

(i) Special research and bibliographic services for the Federal Government on a reimbursed basis.

(j) Selection of materials from the collections for exhibits, in cooperation with the Exhibits Office.

(k) Selection of materials from the collections for preservation treatment, in cooperation with the Preservation Office.

(l) Preparation of newspapers, serials, and special format materials for microfilming, binding, or other preservation treatment.

(m) Administration of trust fund activities which support the employment of consultants, the commissioning of artistic works, and the presentation of public programs.
(n) Applications of electronic data processing techniques to reference services or collection control, in cooperation with the Information Systems Office and the MARC Development Office.
(o) Administration of the national program to provide library service to blind and physically handicapped readers.

OFFICE OF THE DIRECTOR

The Office of the Director (Ref) is responsible for the general administration of the Department, including budget, space, program planning, and the direction and coordination of all services and activities. The Office of the Assistant Director for Library Resources reviews and coordinates activities related to acquisition, processing, preservation, and other aspects of the collections.

GENERAL REFERENCE AND BIBLIOGRAPHY DIVISION

The General Reference and Bibliography Division provides reference and bibliographic services in person, by telephone, and through correspondence in all subjects not covered by specialized divisions of the Library. Through its Public Reference Section the Division provides reference service in the Main, Annex, and Local History and Genealogy Reading Rooms. In addition to the African Section, the other major units in the division are the Bibliography and Reference Correspondence Section, the Children's Book Section, and the Union Catalog and International Organizations Reference Section.

LOAN DIVISION

The Loan Division circulates materials for use outside of the buildings, principally for Members of Congress and other Government agencies, and searches, identifies and issues materials for interlibrary loan. The Division also maintains the Central Charge File, and provides direct service to Congress through bookrooms operated in the Cannon House Building and the U.S. Capitol.

RARE BOOK AND SPECIAL COLLECTIONS DIVISION

The Rare Book and Special Collections Division maintains and services in the Rare Book Reading Room approximately 300,000 books, pamphlets, and broadsides. The various collections are a microcosm of the Library's general collections and represent virtually all disciplines. See *The Rare Book Division: A Guide to its Collections and Services* (1965).

SERIAL DIVISION

The Serial Division maintains and services most of the Library's unbound serial publications, both governmental and non-governmental, and the Library's newspaper collection, bound, unbound, and on microfilm. This collection of nearly 5½ million individual items is serviced

through the Newspaper and Current Periodical Room. The division also collates and prepares serials and newspapers for binding or microfilming.

STACK AND READER DIVISION

The Stack and Reader Division is responsible for custody and reader service of the general classified book collections, now numbering over nine million volumes, and serviced through the Main Reading Room and the Annex Reading Room. The Division maintains and services the Library's general microfilm collection, consisting of over one million individual pieces, through the Microform Reading Room. The Stack and Reader Division also provides stack passes and special study facilities.

AFRICAN SECTION (GR&B)

The African Section recommends materials, prepares bibliographies, and provides specialized reference service on topics concerning African nations south of the Sahara Desert. The African collections are part of the Library's general collections.

LATIN AMERICAN, PORTUGUESE, AND SPANISH DIVISION

The Latin American, Portuguese, and Spanish Division is the Library's center for the study of countries in the Western Hemisphere south of the United States and in the Iberian Peninsula, and for Spanish and Portuguese cultures in other parts of the world. The Division is responsible for collection development, specialized reference service in the Hispanic Society Reading Room, and for the preparation of the annual *Handbook of Latin American Studies.*

ORIENTALIA DIVISION

The Orientalia Division maintains and provides service on the Library's Chinese, Korean, Japanese, Southeast Asian, South Asian, Near Eastern, and Hebraic collections, totaling approximately 1,300,000 volumes in well over 40 different languages. The Division is responsible for recommending acquisitions, organizing its collections of books, serials, newspapers, and microforms, and providing special assistance in languages within its jurisdiction. Reference service is provided in the Orientalia Reading Room.

SLAVIC AND CENTRAL EUROPEAN DIVISION

The Slavic and Central European Division is responsible for the development of the Library's Slavic and East European collections, providing reference service on those collections, and preparing bibliographies and special studies relating to the USSR and the Baltic, Central, and East European countries. The Division has custody of current unbound Slavic language periodicals, which are serviced in the Slavic Reading Room.

GEOGRAPHY AND MAP DIVISION

The Geography and Map Division has custody of the world's largest cartographic collection, consisting of over 3½ million maps and nearly

38,000 atlases, and services this collection in the Geography and Map Reading Room. The Division is responsible for the acquisition and processing of its map collection, and employs computer-aided cataloging procedures in processing its single-sheet maps. See *The Geography and Map Division; A Guide to its Collection and Services* (1975).

MUSIC DIVISION

The Music Division maintains and services the Library's collection of music and music literature, now totaling nearly 4,000,000 books, pieces of music and autographed manuscripts. Reference service is provided in the Music Reading Room as well as in two specialized sections, the Archive of Folk Song (see below) and the Recorded Sound Section. The Division is in charge of the Library's concert and other music activities supported by trust funds. See *The Music Division: A Guide to its Collections and Services (1972)*.

ARCHIVE OF FOLK SONG (MUSIC DIVISION)

The Archive of Folk Song is responsible for developing and providing reference service on the Library's collection of folk music and folklore. In addition to over 25,000 recordings, the collection includes manuscripts, books, pamphlets, and a sizable body of ephemeral material.

SCIENCE AND TECHNOLOGY DIVISION

The Science and Technology Division has primary responsibility within the Library for reference, referral, and bibliographic services in the fields of science and technology, and has custody of the Library's collection of approximately 1,300,000 technical reports. The Division carries out several special bibliographic projects funded through transfer-of-funds arrangements with other Government agencies and operates the National Referral Center for Science and Technology. Readers are served in the Science Reading Room.

PRINTS AND PHOTOGRAPHS DIVISION

The Prints and Photographs Division has custody of the Library's pictorial materials which are not in book format, totaling nearly 10,000,000 prints, photographs, photographic negatives, drawings and posters. The Division is responsible for organizing its collections and for providing reference service in the Prints and Photographs Reading Room.

MOTION PICTURE SECTION (PRINTS AND PHOTOGRAPHS DIVISION)

The Motion Picture Section operates the Motion Picture Laboratory and is responsible for acquisition, processing, preservation, and reference service on the Library's collection of over 200,000 motion picture reels.

MANUSCRIPT DIVISION

The Manuscript Division acquires, organizes, describes, and provides reference service on the personal papers and other manuscript collec-

tions in its custody. The collections, which include the papers of 23 U.S. Presidents, number over 31,000,000 individual pieces. The Manuscript Division is responsible for the administration of the Library's Poetry Office. Readers are served in the Manuscript Reading Room; the Division has a staff of professional historians who are available for consultation.

RECORDED SOUND SECTION (MUSIC DIVISION)

The Recorded Sound Section maintains the Library's collection of over 350,000 disc and over 70,000 tape and wire recordings and provides reference service in matters related to sound recordings. The Section operates a recording laboratory and is responsible for administration of all Library recording activities. Special listening facilities are available in the Section.

DIVISION FOR THE BLIND AND PHYSICALLY HANDICAPPED

The Division for the Blind and Physically Handicapped administers a national program to supply reading materials (braille books, talking books on records and tape, phonographs and cassette players) to blind and physically handicapped residents of the United States. Fifty-three libraries throughout the United States cooperate as regional circulation centers and use the mails to service readers directly; machines are distributed by agencies in each state. The Division also publishes information pamphlets on various aspects of its program and two bimonthly magazines, *Talking Book Topics* and *Braille Book Review*.

FEDERAL RESEARCH DIVISION

The Federal Research Division provides special research services, including bibliographic and abstracting activities, in support of various U.S. Government research programs. Division projects, supported by transferred funds from other Government agencies, are based directly on materials in the Library's collections or made available to the Library for research purposes.

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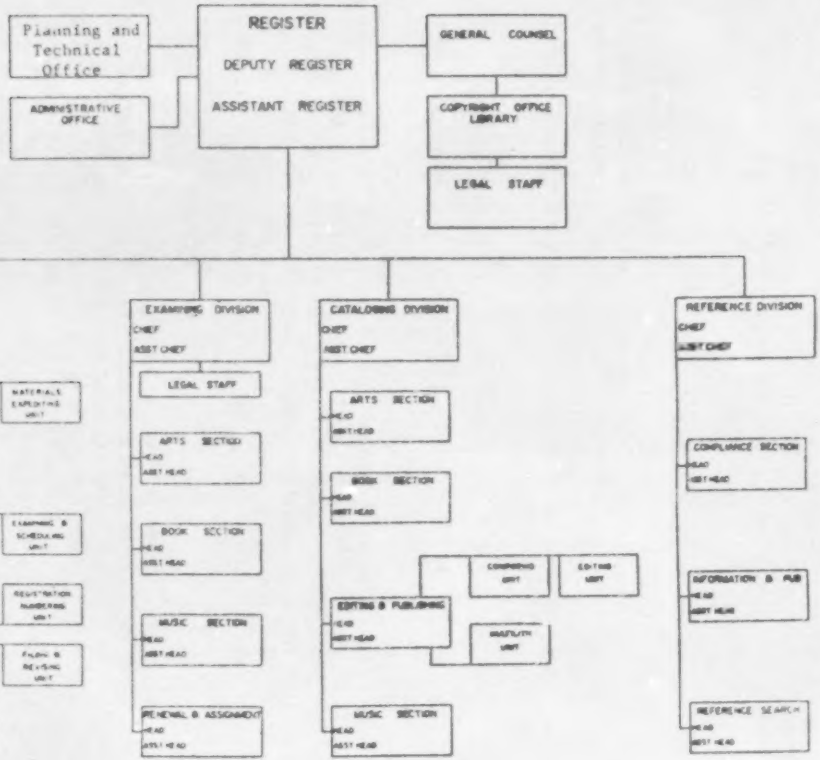
Planning and Technical Office
REGISTER
DEPUTY REGISTER
ASSISTANT REGISTER
GENERAL COUNSEL
ADMINISTRATIVE OFFICE
COPYRIGHT OFFICE LIBRARY
LEGAL STAFF
SERVICE DIVISION
CHIEF
ASST CHIEF
MAIL UNIT
MATERIALS EXPEDITING UNIT
MATERIALS CONTROL
HEAD
ASST HEAD
MISCELLANEOUS FILE UNIT
ACCOUNTING UNIT
EXAMINING & SCHEDULING UNIT
FISCAL CONTROL
HEAD
MASTER INDEX UNIT
REGISTRATION NUMBERING UNIT
DEPOSIT COPIES UNIT
FILING & REVISING UNIT
RECORDS SECTION
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CERTIFICATION MAILING UNIT
EXAMINING DIVISION
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LEGAL STAFF
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THE COPYRIGHT OFFICE

Organization and Principal Functions

OFFICE OF THE REGISTER OF COPYRIGHTS

Barbara A. Ringer, *Register of Copyrights*

Exercises overall direction and supervision of the work of the Copyright Office, including work in conjunction with copyright legislation and promulgation of copyright regulations. The Office of the Register includes a General Counsel's Office with a legal and library staff, an Administrative Office, and a Planning and Technical Office.

PLANNING AND TECHNICAL OFFICE

The Planning and Technical staff is presently assisting ISO in operational design aspects of the automated system for processing assignments and related documents currently under development.

THE CATALOGING DIVISION

The Division is responsible for:

The bibliographic and physical description of all copyrighted works registered or received in the Copyright Office in accordance with the provisions of the copyright law (Title 17, U.S.C.), the recording of the legal facts of copyright pertaining to each work, and the preparation of catalog entries in such form as to provide effective reference access to all information of record regarding any copyright registration.

The recording of assignments and other documents, notices of use, and notices of intent to use, in accordance with the provisions of the copyright law.

The preparation for the printer and reproduction in other formats of copy for all current and cumulative issues of the *Catalog of Copyright Entries.*

The Office of the Chief is responsible for planning and directing the activities of the Division, and for coordinating the work with that of other divisions. Attached to the Office of the Chief is the Technical Information Specialist who is responsible for coordinating and controlling the quality of all cataloging and for conducting studies aimed at the improvement of the computerized cataloging system and its product.

The Arts Section is responsible for the cataloging of all works in copyright classes C, D, and F through M, including such works as dramas, scripts, maps, photographs, prints and plastic works in great variety, and motion pictures, including all renewal registrations in these classes.

The Book Section is responsible for the cataloging of all copyrighted works registered in classes A and B, including books, pamphlets, reports on symposia and conferences, and other monographic works in book and textual form in great variety; the Section also catalogs bound and unbound serials, periodical issues, and contributions to periodicals, as well as all renewal registrations in these classes.

The Music Section is responsible for the cataloging of all copyrighted works registered in class E, musical compositions including renewals in this class. It also catalogs all assignments and related documents and all notices of use of musical compositions on mechanical instruments, as well as notices of intention to make such use.

The Editing and Publishing Section is responsible for the mechanical reproduction of cards containing the catalog entries prepared in the Arts, Book, and Music Sections; for the preparation of added entries; for the sorting and distribution of cards to subscribers to the Copyright Office Card Service, to the Copyright Card Catalog, and to certain other divisions of the Library of Congress, and for use in preparing page copy for the *Catalog of Copyright Entries*; for the arrangement and editing of these entries for the Catalog and the preparation of indexes; for the preparation of index entries for the assignments and related documents cataloged in the Music Section; and for the preparation of page copy for the cumulative series of the *Catalog of Copyright Entries*.

THE EXAMINING DIVISION

The duties of this Division are:

The examination of all applications, certifications, copies, affidavits, and other material presented to the Copyright Office for the registration of original and renewal copyright claims to determine their acceptability for registration under the provisions of the copyright statute and court decisions.

The examination of assignments of copyright and related documents pertaining to copyright, notices of use, and notices of intention to use music on mechanical instruments, presented for recordation in the Copyright Office.

The conduct of legal research relating to the interpretation of the copyright law and resulting in the formulation of policies, practices, and actions of the Examining Division.

The Office of the Chief has the responsibility for:

Direction of the operations and functions of the Examining Division.

The decisions made in the Division in connection with the approval or rejection of all copyright claims presented for registration and documents presented for recordation.

Instituting and guiding all legal research assignments in the Examining Division.

Promulgation of Division practices and procedures.

Review any action taken with respect to rejected applications upon second and subsequent appeal.

The Book Section is responsible for the examination, including the approval or rejection, of applications for registration of claims to copyright in material broadly categorized as books.

The Music Section is responsible for the examination, including the approval or rejection, of applications for registration of claims to copyright in published and unpublished musical compositions, sound recordings, notices of use, and notices of intention to use music on mechanical instruments.

The Arts Section is responsible for the examination, including approval or rejection, of applications for registration of claims to copyright in dramatic compositions, lectures, maps, works of art, reproductions of works of art, technical drawings, photographs, motion pictures, prints, commercial prints and labels, periodicals, and contributions to periodicals.

The Renewal and Assignment Section is responsible for the examination, including approval or rejection, of assignments and other documents dealing with copyright and applications for registration of claims to renewal copyright for all classes of works.

THE REFERENCE DIVISION

The Office of the Chief plans, directs, and coordinates the activities of the Division. Also, maintains operational liaison with the U.S. Customs Service concerning the implementation of those parts of the copyright law that relate to customs matters.

The Information and Publications Section maintains the public office for answering mail and telephone inquiries about the copyright law, registration procedures, and copyright records, and for providing assistance to visitors to the Copyright Office. The Section also provides informational material and various publications on copyright, as well as occasional exhibits.

The Reference Search Section conducts searches in the Copyright Office records, furnishes reports on the copyright facts of record (including certified search reports), and assists the public in using the records of the Copyright Office.

The Compliance Section is concerned with unregistered copyright claims, conducting searches in the records to determine whether or not specified works published with notice of copyright have been deposited for registration. If no record of registration is found, the Section writes to the copyright claimant concerning the deposit and registration requirements of the law and, when necessary, takes steps to invoke the demand provisions of the statute for noncompliance. The actions of the Compliance Section serve to obtain registrations that would otherwise not be made and thereby to make a part of the public records of the Office the copyright facts about such works; thus, in particular instances, works desired by the Library of Congress are acquired through the activities of the Compliance Section.

The Certifications and Documents Section furnishes certifications and certified copies of the official records of the Copyright Office, including copies deposited for registration, other certified statements, and miscellaneous legal documents.

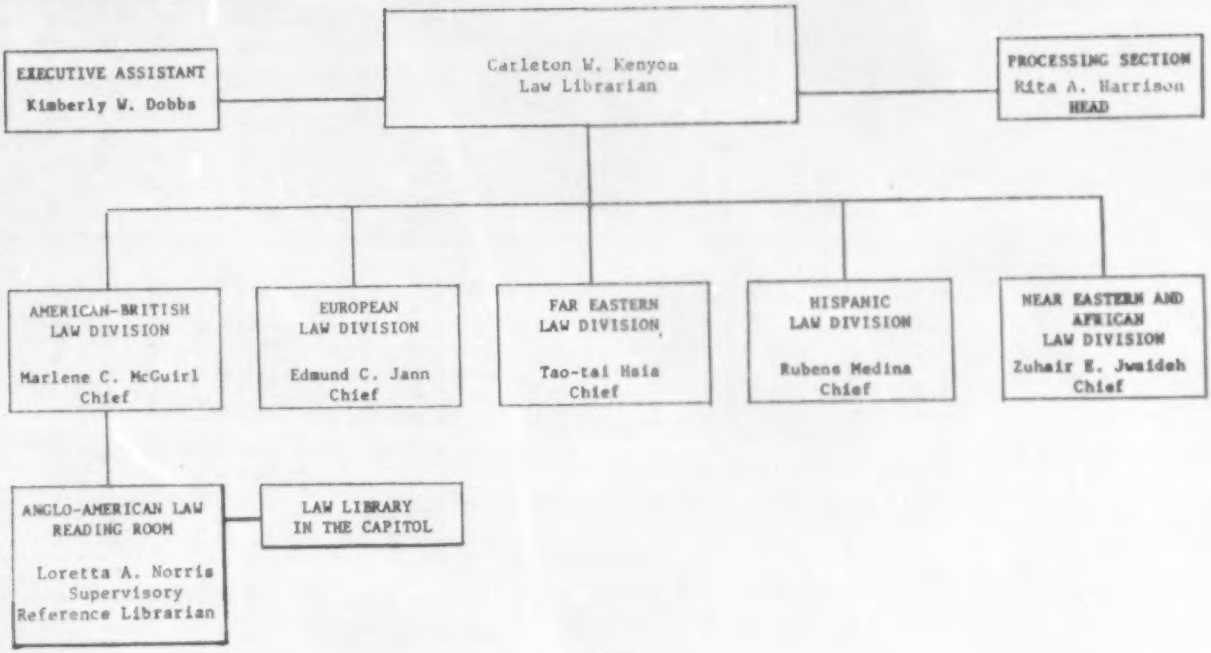
THE SERVICE DIVISION

The Office of the Chief is responsible for planning, coordinating, and directing all activities of the Division.

The Fiscal Control Section examines and schedules all remittances received, makes daily deposits with the Treasurer of the United States; prepares master control cards; assigns classification symbols and registration numbers to domestic and foreign material which meets registration requirements; maintains appropriate accounting records; and prepares all required financial statements and reports.

The Materials Control Section conducts exhaustive searches of various files throughout the Office and the Library for missing elements or data concerning pending cases; obtains and connects all elements (including application, copies, and fee) required for the registration process prior to forwarding material to the Examining Division; prepares material for the consideration of the Selection Officers; separates and forwards copies selected for the Library's collections; is responsible for the custody and maintenance of the correspondence and unfinished business files of the Copyright Office; maintains a subject file of all material of subject significance; and receives and dispatches all Copyright Office mail. This section furnishes messenger service for the entire Copyright Office.

The Records Control Section maintains and services the deposit copies that have not been selected by the Library of Congress; the application records of copyright registrations and the Copyright Card Catalogs; and affixes the Copyright Office seal to all certificates of registration.


EXECUTIVE ASSISTANT
Kimberly W. Dobbs
Carleton W. Kenyon
Law Librarian
PROCESSING SECTION
Rita A. Harrison
HEAD
AMERICAN-BRITISH
LAW DIVISION
Marlene C. McGuirl
Chief
EUROPEAN
LAW DIVISION
Edmund C. Jann
Chief
FAR EASTERN
LAW DIVISION
Tao-tai Hsia
Chief
HISPANIC
LAW DIVISION
Rubens Medina
Chief
NEAR EASTERN AND
AFRICAN
LAW DIVISION
Zuhair E. Jwaideh
Chief
ANGLO-AMERICAN LAW
READING ROOM
Loretta A. Norris
Supervisory
Reference Librarian
LAW LIBRARY
IN THE CAPITOL

(SS)

THE LAW LIBRARY

Organization and Principal Functions

Established by an act of Congress in 1832 as a department of the Library of Congress, the Law Library originally contained 2,011 volumes, 639 of which had been part of Thomas Jefferson's private library. Today the collections in the custody of the Law Library contain over 1,200,000 volumes, including one of the world's largest and most comprehensive collections of foreign and international law, developed to satisfy the constantly increasing needs of Congress, the executive agencies, and the Federal courts. It has also gathered a staff of legal experts who provide reference and research services and aid in collecting materials in all areas of law.

The collections are jurisdictional by country and cover all legal systems, including common law, civil law, Roman law, canon law, Chinese law, Jewish and Islamic law, and ancient and medieval law. Foreign and international law materials are obtained through a worldwide program of acquisitions, in which the Library of Congress is aided by the State Department and other government agencies.

The character and extent of the services of the Law Library depend, in each instance, on its responsibility to the user and on the facilities available. The primary duty of the Law Library is to provide service to the legislative branch of the Government, including Members of Congress, congressional committees, the Legislative Counsels of the House and Senate, and other officers and offices of Congress.

The service to Congress in foreign and international law takes various forms: providing books and other materials for direct use; assisting Members of Congress and their staffs as readers; preparation of bibliographies and translations for official use; conferences in person or by telephone on inquiries concerning bibliographic information or legal matters; and preparation of written reports and studies on questions of substantive law.

Since most important legal materials are published in the vernacular languages and almost all foreign countries have a legal system different from that of the United States, the Law Library, in most instances, is the only source of information available to Congress and other Federal users on questions involving the law of other nations. The pool of international law experts in the Law Library is an efficient and economical way to provide an indispensable service to the Government and the people of the United States.

OFFICE OF THE LAW LIBRARIAN

The Law Librarian directs the administrative office, five divisions, and a processing section. Each of the five divisions is responsible for the maintenance, development, and circulation of the collections as-

signed to its custody, and for the reference and research service on these collections, including inquiries on international law as it is applied in its assigned jurisdictions. The assigned jurisdictions are as follows:

AMERICAN-BRITISH LAW DIVISION

The United States, its territories and possession; the United Kingdom; Eire; the Commonwealth and dependent territories.

EUROPEAN LAW DIVISION

The countries of Europe (exclusive of Portugal and Spain) and their territories and possessions; and the U.S.S.R., as well as the Ancient Law, Canon Law, and General Law collections.

FAR EASTERN LAW DIVISION

China, Japan, Korea, and Southeast Asian countries. The Division collaborates in answering inquiries concerning Commonwealth countries with the American-British Law Division and in answering inquiries concerning Indo-China and Indonesia with the European Law Division.

HISPANIC LAW DIVISION

Portugal and Spain and their possessions; Latin America; the Philippines; and Puerto Rico.

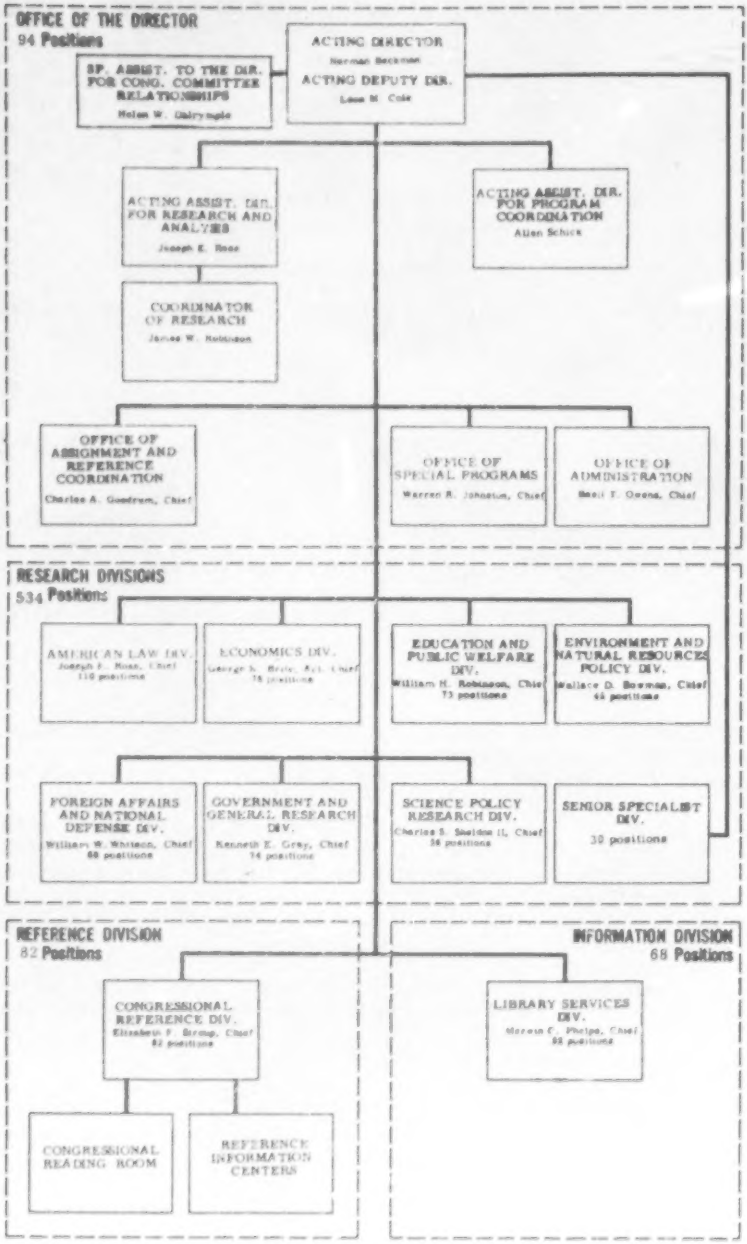
NEAR EASTERN AND AFRICAN LAW DIVISION

The countries of the Near East—Aden, Afghanistan, Bahrain, Federation of the Arab Amirates of the South, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia, Syria, Turkey, Yemen; all political divisions of Africa except the Spanish and Portuguese jurisdictions (which continue to be the responsibility of the Hispanic Law Division); as well as the Islamic Law collection. This division is responsible for all reference and research on Islamic Law as it is applied throughout the world.

PROCESSING SECTION

Is responsible for the coordination of the preparation for binding, control of serials, shelflisting, and preparation for the shelves; also for assisting the Associate Law Librarian in the planning and supervision of special projects as assigned.

CONGRESSIONAL RESEARCH SERVICE



[March 15, 1976]

THE CONGRESSIONAL RESEARCH SERVICE

Organization and Principal Functions

Office of the Director

Norman Beckman, *Acting Director*
Leon Cole, *Acting Deputy Director*
Charles A. Goodrum, *Assistant Director, Chief, Office of Assignment and Reference Coordination*
Joseph E. Ross, *Acting Assistant Director for Research and Analysis*
Allen Schick, *Acting Assistant Director for Program Coordination*

American Law Division

Joseph E. Ross, *Chief*

Congressional Reference Division

Elizabeth Stroup, *Chief*

Economics Division

George K. Brite, *Acting Chief*

Education and Public Welfare Division

William H. Robinson, *Chief*

Environment and Natural Resources Policy Division

Wallace D. Bowman, *Chief*

Foreign Affairs and National Defense Division

William W. Whitson, *Chief*

Government Division

Kenneth Gray, *Chief*

Library Services Division

Merwin C. Phelps, *Chief*

Science Policy Research Division

Charles S. Sheldon II, *Chief*

Senior Specialists Division

Norman Beckman, *Acting Chief*

Within the Library, the Congressional Research Service (CRS) is the department that works exclusively as the research arm for Members, committees, and their staffs. In addition to brief factual information, CRS prepares background reports on public issues, in-depth and comprehensive analyses of such issues, section-by-section comparisons of bills, tabulations of statistics, compilations of statutes, historical data, legislative histories, translations, pro and con arguments on legislative proposals, legal opinions, interpretations of court decisions, and charts, graphs and maps. CRS also makes newspaper searches and lends books, and the senior experts are available to Members and staffs for briefings and consultations and for assistance in virtually every aspect of committee work.

The Office of the Director has oversight responsibility for the implementation of statutory provisions, establishes Service policies, carries out the administrative functions provided by the Library and oversight committees, and ensures the quality of CRS products and services. The Director is assisted by a Deputy Director and three Assistant Directors in carrying out these responsibilities. The Executive Officer is responsible for personnel actions, training and career development, facilities, supplies and equipment, and other administrative work. Various units within the Office of the Director include the Inquiry Receipt Unit, which records and routes congressional requests to appropriate divisions, the Quality Review Staff, headed by the Coordinator of Research, which assures the responsiveness and appropriateness of research products, and an Automated Information Systems group providing support for computer applications within the Service. A messenger service for deliveries to congressional office buildings and the Capitol is also within the administrative purview of the Office of the Director.

Seven of the eight research divisions are parallel in organization. Headed by a chief who also carries the rank of senior specialist, these divisions are composed of research assistants, analysts, specialists and senior specialists. The Director of the Service serves as Chief of the Senior Specialists Division.

Subject areas of responsibility within the research divisions are as follows:

The American Law Division, the oldest and largest of the Service's divisions, performs legal research on requests pertaining to such subjects as constitutional law, election law, civil rights and liberties, the judiciary, separation of powers, criminal law, military justice, antitrust, parliamentary law, and international law. The Division also prepares the *Digest of Public General Bills and Resolutions*, *The Constitution of the United States of America—Analysis and Interpretation*, *Major Legislation of the 93d Congress* and, more recently, the terminating program lists and purpose and effect memoranda authorized by the Legislative Reorganization Act of 1970.

The Economics Division performs research on such subjects as communications, consumer affairs, domestic economic development, demography, economic growth and stabilization, Federal budget, housing, insurance, international trade and development, labor, money and banking, taxation, and transportation. The Service's Graphics Unit is administratively attached to this Division.

The Education and Public Welfare Division handles health, education, income maintenance and social services programs—including such subjects as aging, crime, drug abuse control, drug pricing, economic opportunity programs, education, financing, gun control, health facilities and manpower, immigration, manpower programs, medicaid and medicare, national health insurance, public retirement programs, private pension plans, social security, veterans, and welfare reform.

The Environment and Natural Resources Policy Division, established in 1969 and the Service's newest division, responds to requests on natural resources and pollution topics including, for example, agricultural marketing and production, agricultural wastes, solid waste management, air and water pollution, chemicals in the environment, energy and fuels, environmental monitoring systems, fisheries and wildlife, forestry and timber, minerals and mining, outdoor recreation, pesticides, population pressures, public lands, and resources projections.

The Foreign Affairs and National Defense Division covers U.S. foreign policy, the conduct and machinery of U.S. foreign relations, defense policy and organization, defense budget and weapons systems, military manpower, international cooperation in outer space, international development and foreign aid policy, and regional (African, Asian, European, Latin American, and Middle Eastern) affairs.

The Government Division responds to questions on advisory bodies and commissions American government, campaign finances, civil liberties, civil service and bureaucracy, Congress, congressional districts, District of Columbia Government, electoral college, ethics (congressional and executive), executive reorganization, history, impoundment, Indians, intergovernmental relations, the Presidency, public administration, state and local governments, territories and possessions, urban affairs, and women's rights. The Division has a speechwriting staff and administrative purview over the Service's Translation Unit.

The Science Policy Research Division was established in 1964 and covers a wide range of subjects, including aviation technology, behavioral sciences, biological and medical problems, earth, atmospheric and marine sciences, engineering, management of science and technology, national science policy, nuclear energy, space exploration and application, technology assessment, and the information sciences.

The Senior Specialists Division prepares authoritative studies bearing on legislative problems for Members and committees of Congress and provides assistance when requested in connection with committee hearings and investigations.

The Congressional Reference Division was established in 1967 to handle the Service's short-term reference requests, those which do not require the expertise of a subject specialist but call for speed and versatility in locating diverse information. The Division answers a majority of inquiries received by the Service and is responsible for the Congressional Reading Room and Reference Center operations.

Staffed primarily by professional librarians, the Library Services Division provides backup support to all divisions by acquiring and developing CRS collections of books, periodicals and publications, pamphlets and clippings from periodicals and newspapers, and providing bibliographic support to congressional and CRS divisional staffs.

APPENDIX B

KEY AUTOMATED INFORMATION SERVICES PERSONNEL

Administrative Department

F. E. Croxton, *Director*

INFORMATION SYSTEMS OFFICE

Assistant Director:
William R. Nugent, Assistant Director for Information Systems Development.
Michael A. Katz, Administrative Officer.

System Development & Standards Office:
Theodore E. Leach, Chief.
H. Tom Littlejohn, Head, Systems Programming Section.
Edward I. Boniface, Head, Standards and Training Section.

Computer Applications Office:
Charlene A. Woody, Chief.
Viola R. Jackson, Head, Applications Support Section.
D. Lee Power, Head, CRS Applications Section.
Richard W. Genter, Head, Reference Applications Section.
Walter P. Gallagher, Head, Management Information Applications Section.
Joseph E. Marsala, Head, Production Systems Management Section.
Dennis E. Chin, Head, Copyright Applications Section.

Computer Service Center:
Martin V. Hughes, Chief.
Harold L. Gatton, Head, Operations, Control and Scheduling Section.
Lawrence P. Troxell, Shift Supervisor.
Gerald M. Hall, Shift Supervisor.
William L. Fitzpatrick, Quality Control Supervisor.
Allena Roberts, Keypunch Supervisor.

Processing Department

Edmond L. Applebaum, *Acting Director*

MARC Development Office:
Chief, Henriette D. Avram.
Assistant Chief, Lucia J. Rather.

Cataloging Distribution Service Division: Chief, Paul E. Edlund.

MARC Editorial Division: Chief, Barbara J. Roland.

Serial Record Division: Chief, Joseph W. Price.

REFERENCE DEPARTMENT

PAUL L. BERRY, *Director*

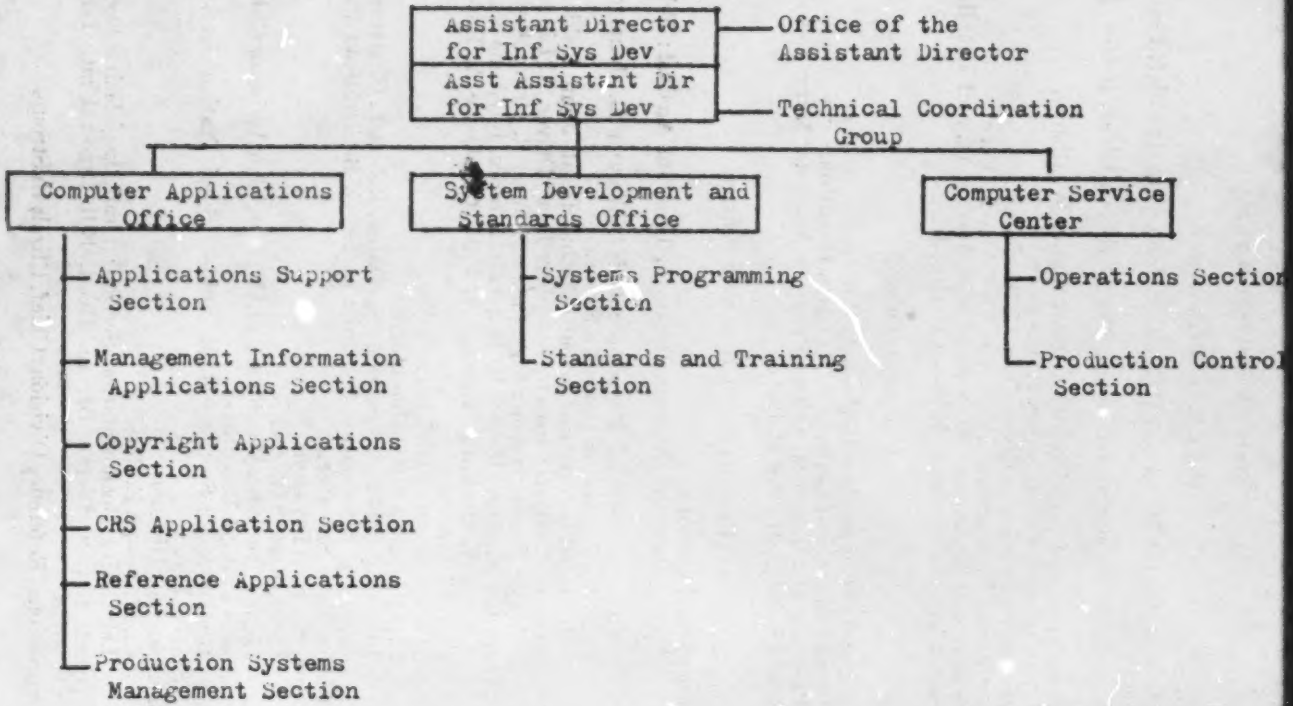
Division for the Blind and Physically Handicapped: Chief, Frank Kurt Cylke.
General Reference and Bibliography Division: Chief, Robert H. Land.
Geography and Map Division: Chief, Walter W. Ristow.
Loan Division: Chief, Legare H. B. Obear.
Manuscript Division: Chief, John C. Broderick.
Prints and Photographs Division: Chief, Alan M. Fern.
Science and Technology Division: Chief, Marvin W. McFarland.
Serial Division: Chief, S. Branson Marley, Jr.

COPYRIGHT OFFICE

Register of Copyrights: Barbara A. Ringer.
Deputy Register of Copyrights: L. Clark Hamilton.
Planning and Technical Office: Program Analysts, Mary F. Lyle, Edward R. Mills, Michael R. Pew.

CONGRESSIONAL RESEARCH SERVICE

Office of the Director:
Acting Director: Norman Beckman. Program Analyst: Felix P. Krayeski.
Office of Special Programs: Chief, Warren R. Johnston. CRS Administrator, Gary Lee Evans.
Information Systems Group: Acting Head, John Kaldahl. Systems Analysts: Joan Christopher, Terry Driver, Al Linden.
Major Issues System: Coordinator, James R. Price. Assistant Coordinator, Robert R. Marshall. Editors, BevAnne Ross, Adolph A. Hoehling, Eleanor A. Fullerton, Leslie A. Roper, David I. Gresty.
Science Policy Research Division:
Chief, Charles S. Sheldon II.
Information Sciences Section: Specialist, Robert L. Chartrand.
Analysts in Information Sciences: Louise G. Becker, Jean Paul Emard, Jane Stoenberg.
Library Services Division:
Chief, Merwin C. Phelps.
Legislative Index Vocabulary (LIV): Division Assistant Chief, Frederick John Rosenthal.
Bibliographic Section: Head, Subject Specialization Section, Shirley Loo.
American Law Division:
Chief, Joseph E. Ross.
Legislative Documentation Section: Head, Legislative Document Section, Dicran Barian. Head, Bill Digest Unit, Terry Guertin.
Congressional Reference Division: Chief, Elizabeth Stroup.


Assistant Director for Inf Sys Dev
Asst Assistant Dir for Inf Sys Dev
Office of the Assistant Director
Technical Coordination Group
Computer Applications Office
System Development and Standards Office
Computer Service Center
Applications Support Section
Management Information Applications Section
Copyright Applications Section
CRS Application Section
Reference Applications Section
Production Systems Management Section
Systems Programming Section
Standards and Training Section
Operations Section
Production Control Section

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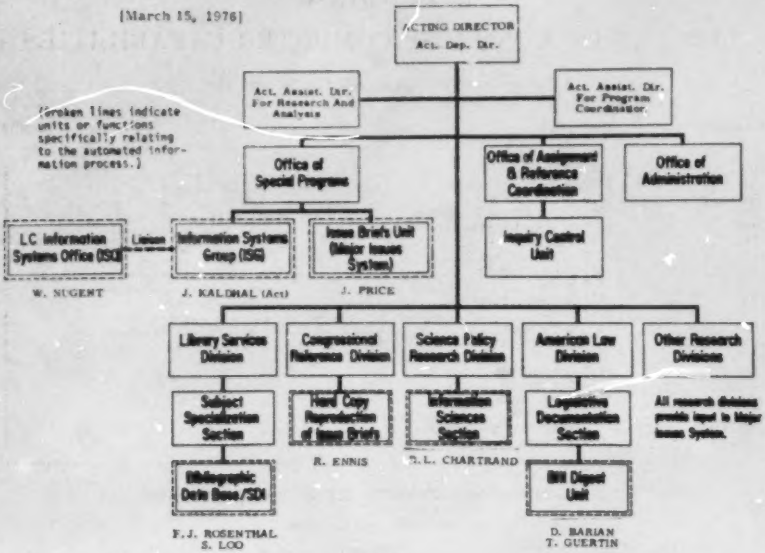
2. CRS ORGANIZATION FOR AUTOMATED INFORMATION SERVICES



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APPENDIX C

LIBRARY OF CONGRESS COMPUTER CAPABILITIES

TABLE I.—ISO COMPUTER SERVICE CENTER HARDWARE

Manufacturer	Description	Quantity
IBM	370/158 Model J	1
IBM	370/158 Model JI	1
IBM	3830 disk controller	2
IBM	3333–1 disk storage and control	1
IBM	3333–11 disk storage and control	1
IBM	3330–1 disk storage	3
IBM	3330–11 disk storage	1
IBM	2821 printer controller	2
IBM	1403 printer	2
IBM	3811 printer controller	1
IBM	3211 printer	1
IBM	2501 card reader	1
IBM	3504/3525 card reader/punch	1
IBM	3213 console	2
ITEL	7830 disk controller	3
ITEL	7330 disk storage	28
STC	3800 tape controller	2
STC	3470 tape drives	12
COMTEN	3670 communications controller	1
COMTEN	3650 communications controller	1

TABLE II.—CATALOGING DISTRIBUTION SERVICE DIVISION HARDWARE

Information International

VideoComp—Model 77/800

IMB

Processing Unit—CPU
Model 77–135
Uses DOS/VS operating system
Driven by 144K CPU

6 9-track tape drives
Model 34–20

1 7-track tape drive
Model 34–20

1 line printer
Model 1403

1 card reader
Model 3505

1 keypunch with interpreter
Model A–22

1 keypunch without interpreter
Model C–22

1 card punch
(was to be installed in 1976
but has not)

4 disk drives
Model 2314 (?)

Recognition Equipment, Inc.

3 bar code reader/sorters
Driven by 2 8k CPUs

1 optical character reader
Driven by 1 12K CPU

5 tape drives

1 line printer

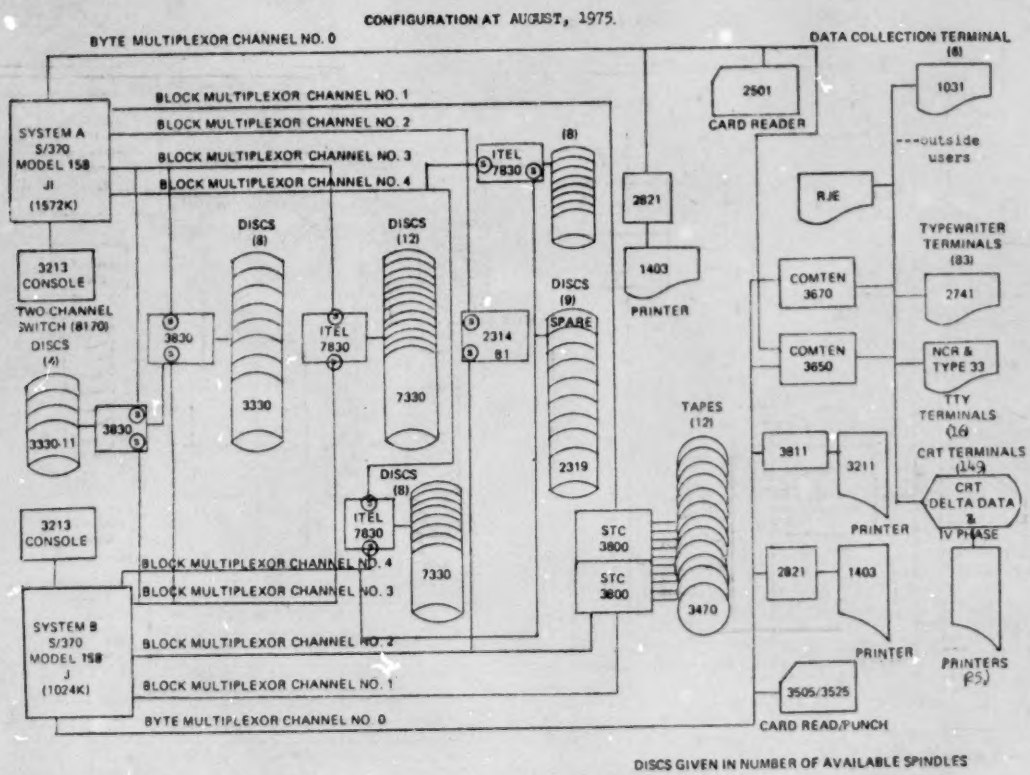
Olivetti

3 encoding machines

1 Flexiwriter

The Cataloging Distribution Service Division's FY 1976 hardware budget is $544,519, funded by this appropiration which is largely self-supported.

(90)



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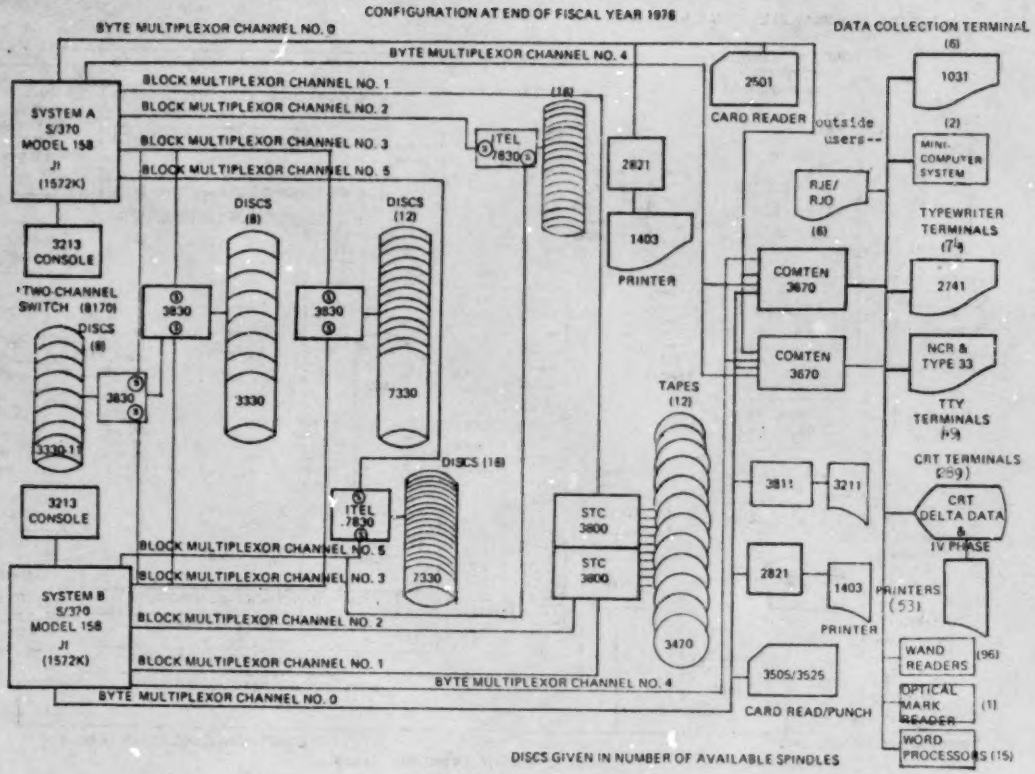
AUGUST, 1975


CONFIGURATION AT END OF FISCAL YEAR 1976
BYTE MULTIPLEXOR CHANNEL NO. 0
BYTE MULTIPLEXOR CHANNEL NO. 4
BLOCK MULTIPLEXOR CHANNEL NO. 1
BLOCK MULTIPLEXOR CHANNEL NO. 2
BLOCK MULTIPLEXOR CHANNEL NO. 3
BLOCK MULTIPLEXOR CHANNEL NO. 5
SYSTEM A S/370 MODEL 158 J1 (1572K)
3213 CONSOLE
TWO-CHANNEL SWITCH (8170)
DISCS (8)
3830
3330
DISCS (8)
DISCS (12)
7330
ITEL 7830
(16)
2821
1403 PRINTER
2501 CARD READER
outside users--
RJE/ RJO
(6)
DATA COLLECTION TERMINAL
(6)
1031
(2)
MINI-COMPUTER SYSTEM
TYPEWRITER TERMINALS (74)
2741
COMTEN 3670
COMTEN 3670
NCR & TYPE 33
TTY TERMINALS (49)
TAPES (12)
3470
STC 3800
STC 3800
DISCS (16)
3811
3211
CRT TERMINALS (89)
CRT DELTA DATA & IV PHASE
2821
1403 PRINTER
PRINTERS (53)
3505/3525 CARD READ/PUNCH
WAND READERS (96)
OPTICAL MARK READER (1)
WORD PROCESSORS (15)
SYSTEM B S/370 MODEL 158 J1 (1572K)
3213 CONSOLE
BLOCK MULTIPLEXOR CHANNEL NO. 5
BLOCK MULTIPLEXOR CHANNEL NO. 3
BLOCK MULTIPLEXOR CHANNEL NO. 2
BLOCK MULTIPLEXOR CHANNEL NO. 1
BYTE MULTIPLEXOR CHANNEL NO. 4
BYTE MULTIPLEXOR CHANNEL NO. 0
DISCS GIVEN IN NUMBER OF AVAILABLE SPINDLES

(86)

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APPENDIX D

COMPUTER CENTER FACILITY SOFTWARE

The Systems Software currently implemented and maintained by the System Development and Standards Office comprises:

A. COMPUTER OPERATING SYSTEMS

1. *IBM OS/VS1 and associated computer programs.*—OS/VS1 is a set of integrated computer programs that enlarge the capabilities of the computer system and facilitate its programing and operation.

B. DATA COMMUNICATIONS SYSTEMS

1. *IBM Customer Information Control System (CICS).*—CICS is a general purpose data communications monitor that operates to provide a data communications environment for multiple on-line user terminals and applications.
2. *IBM Display Management System (DMS).*—DMS is a set of computer programs designed to assist the implementation of display-oriented computer applications in the on-line CICS data communications environment.
3. *DAP/MON Program.*—DAP/MON is a computer program, providing program debugging capabilities for computer programs being tested in the CICS Data Communications environment.
4. *IBM Administrative Terminal System (ATS).*—ATS is an interactive time-sharing system that provides a means for preparing, proofing, revising, updating, and displaying all types of textual information.
5. *IBM LEARN ATS.*—LEARN ATS is a set of computer programs that assists ATS Users in learning how to use ATS from the terminal.

C. COMPUTER PROGRAMING LANGUAGE SYSTEMS

1. *ANS COBOL Compiler and Libraries.*—ANS COBOL is a programing language system designed to facilitate the programing of business-oriented computer applications.
2. *Capex Optimizer II.*—Optimizer II is a set of computer programs that optimizes the object code produced by IBM's ANS COBOL Compiler.
3. *IBM PL/1 Optimizing Compiler.*—PL/1 is a programing language system designed to facilitate the programing of information retrieval-oriented computer applications.

D. COMPUTER PERFORMANCE SYSTEMS

1. *Boole & Babbage Configuration Utilization Evaluator (CUE).*—CUE is a set of computer programs that collect data about the computer configuration activity and analyse them in terms of computer operations performance.

2. *Boole & Babbage Problem Program Evaluator (PPE).*—PPE is a set of computer programs that collect data about the computer program activity and analyse them in terms of computer programing performance.

3. *Pace KOMAND Data Acquisition System (KOMAND-DAS).*—KOMAND-DAS is a set of computer programs that collect data about the utilization of computer resources and present them in terms of cost accounting reports.

E. COMPUTER UTILITY SOFTWARE

1. *Innovation Data Processing Fast Dump Restore (FDR).*—FDR is a computer program that facilitates and speeds up the process of moving data between disk and tape storage media, principally for backup purposes.

2. *IBM Sort/Merge 1 (SMI).*—SMI is a set of computer programs that facilitates the sorting of large quantities of data into numerous orders or sequences.

3. *Informatics MARK IV.*—MARK IV is a set of computer programs that facilitate the programing of many types of computer applications, providing facilities for file and data base creation and maintenance, information retrieval, and report writing.

APPENDIX E

REMOTE TERMINALS

[Fiscal years]

Department	End 1975	1976 increase	End 1976 total
A. Office of the Librarian (General Council): IBM 2741	1	0	1
B. Administrative Department:			
1. CRT (Delta)	8	+1	9
2. GE Printer	2	0	2
3. IBM 2741	11	+1	12
4. Teletype	2	0	2
Total	23	+2	25
C. CRS:			
1. CRT (Delta)	17	+54	71
2. GE Printer	13	+15	28
3. IBM 2741	45	−16	29
4. Teletype	4	+4	8
5. Opscan	3	0	3
6. RJO's		+3	3
Total	82	+60	142
D. Congress:			
Senate:			
1. CRT (Delta)	12	0	12
2. CRT (Hazeltine)		92	92
3. Printers (GE)	7	92	99
	19	184	203
House: Miscellaneous devices		+25−435	25−435
OTA:			
1. NCR—Scorpio access	1		1
2. TI—Scorpio access	1		1
3. COPE	1	−1	0
4. IBM Com Mag Card	1	+2	3
Total	4	+1	5
GAO: EDP 300—Scorpio access	1		1

[Fiscal years]

Department	End 1975	1976 increase	End 1976 total
E. Copyright:			
1. CRT (Delta)	60	+23	83
2. GE Printer	7	+2	9
3. IBM 2741	2	0	2
4. RJE	1	0	1
5. Teletype			
Total	70	+34	104
F. Reference Department:			
1. CRT (Delta)	6	+16	22
2. GE Printer	2	+10	12
3. IBM 2741	10	0	10
4. Teletype (NRC)	1	+5	6
5. Opscan	0	0	0
6. Optical Mark Reader		+1	1
Total	19	+32	51
G. Law Library: CRT (Delta)		+1	1
H. Processing Department:			
1. CRT (Four-Phase)	55	+60	115
2. GE Printer	1	0	1
3. IBM 2741	14	+6	20
4. Teletype (model 37)	9	+15	24
5. IBM 1031	6	0	6
6. Bar Code Reader		+96	96
7. Bar Code Printers		+1	1
8. RJE/RJO		+2	2
9. CRT (Beehive)	5	+12	17
10. Centronix Printer	3	+10	13
Total	93	+202	295

APPENDIX F

USER GROUPS OF TERMINAL DEVICES ATTACHED OR SCHEDULED FOR ATTACHMENT TO LIBRARY COMPUTERS

	End of fiscal year—	
	1975	1976
External users:		
Senate	19	203
House	0	25–435
OTA	4	5
GAO	1	1
Internal users:		
CRS	22	142
Copyright Office	70	104
Processing department	85	265
Reference department	19	51
Administrative department	23	25
Librarian's office	1	1
Law library	0	1
Total	304	823–1,233

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APPENDIX G

SELECTED BUDGETARY DATA

TABLE G1.—LIBRARY OF CONGRESS FUNDING SUPPORT AND STAFF—FISCAL YEARS 1965, 1970, 1975, 1976

Appropriation	1965		1970		1975		1976	
	Funding	Authorized staff [1]	Funding	Authorized staff [1]	Funding	Authorized staff [1]	Funding	Authorized staff [1]
Salaries and expenses, Library of Congress	$11,001,800	1,365	$20,881,000	1,580	$50,144,000	2,489	$57,285,000	2,547
Librarian's office		(50)		(42)		(57)		(58)
Administrative department		(324)		(426)		(648)		(676)
Law library		(66)		(79)		(88)		(89)
Processing department		(482)		(506)		(1,080)		(1,102)
Reference department		(443)		(527)		(616)		(622)
Copyright Office	1,914,200	255	3,496,000	332	6,043,000	385	6,753,500	416
National Commission on New Technological Uses of Copyrighted Works							337,000	
Congressional Research Service	2,412,800	224	4,683,000	323	13,767,000	703	16,706,000	778
Distribution of catalog cards	3,810,100	393	8,025,000	604	10,830,000	555	11,285,000	498
Books for the general collections	670,000		750,000		1,458,000		1,695,000	
Books for the Law Library	110,000		140,000		229,000		251,000	
Books for the blind and physically handicapped	2,458,600	36	7,030,000	72	11,471,900	105	15,872,000	109
Collection and distribution of library materials (special foreign currency program):								
U.S. dollars	124,500	10	199,000	10	295,600	9	295,600	9
Foreign currencies	1,417,000		1,617,000		1,718,500		1,718,500	
Total	1,541,500	10	1,816,000	10	2,104,100	9	2,014,100	9
Furniture and furnishings					[2] 3,319,000		4,078,000	
Revision of annotated constitution					[3] 34,000	4	34,000	4
Organizing and microfilming the papers of the Presidents	112,800	15	136,000	15	[4]			
Preservation of motion pictures	50,000	1	[5]					
Total	24,081,800	2,299	46,957,000	2,936	99,310,000	4,250	116,210,600	4,361

[1] Included are all authorized permanent positions, supported from direct congressional appropriations. Not included are all temporary or indefinite positions supported from gift and trust fund income, and positions located overseas paid from foreign currencies.

[2] Appropriation transferred to Librarian of Congress from Architect of the Capitol.

[3] Funding of project started in fiscal year 1971.

[4] Funding of project ended in fiscal year 1971.

[5] Funding of project transferred to salaries and expenses, Library of Congress, in fiscal year 1968 through comparative transfer.

TABLE G2.—LIBRARY OF CONGRESS

[Estimated automation costs by appropriation for fiscal year 1976]

Appropriation	Man-years	Salaries and compensation	Personnel benefits	Equipment rental [1]	Other services [2]	Total
Salaries and expenses, Library of Congress	228.0	$3,847,977	$346,318	$3,915,242	$117,300	$8,226,837
Copyright Office	112.0	1,502,175	135,196			1,637,371
Congressional Research Service	83.7	1,138,030	102,423	68,660	424,620	1,733,733
Distribution of catalog cards	21.0	309,514	27,856	626,836		964,206
Books for the blind and physically handicapped	12.5	134,344	12,091			146,435
Working funds:						
Justice—Watergate Special Prosecution Force		5,184		7,020		12,204
National Science Foundation—develop an automated national data base for serials	6.0	78,426	7,145	3,400	4,861	93,832
Ohio College Library Center (OCLC) (lead agency)					300,000	300,000
National Endowment for the Humanities—national film collection catalog	6.0	74,173	5,423	10,813	407	90,816
National Endowment for the Humanities—national serials data base in humanities	14.0	200,057	18,006	26,480	4,000	248,543
National Commission on Libraries and Information Science—library network development					52,000	52,000
Department of the Army—CRREL	4.5	77,900	7,011	650	6,840	92,401
National Science Foundation—Antarctic bibliography	4.5	76,909	6,922	650	6,750	91,231
Reimbursements:						
U.S. Supreme Court—process payroll				500		500
U.S. Senate—Committee on Foreign Relations		11,594		27,846		39,440
Gift and trust funds: Council on Library Resources—COMARC pilot project	2.0	4,374	394			4,768
Total	494.2	7,467,657	668,785	4,688,097	916,778	13,734,317

[1] Does not include any equipment purchases or depreciation on purchased equipment.
[2] Except in cases of CRS, ISO, MARC development, working and gift and trust funds, costs of other services are not readily available.

TABLE G3.—LIBRARY OF CONGRESS

[Estimated automation costs by organization for fiscal year 1976]

Organization	Man-years	Salaries and compensation	Personnel benefits	Equipment rental [1]	Other services	Total
Office of the Librarian				$1,200		$1,200
Federal Library Committee—OCLC (lead agency)					$300,000	300,000
Administrative Department:						
Information Systems Office	84.0	$1,532,687	$137,942	2,531,207	79,500	4,281,336
U.S. Supreme Court—process payroll				500		500
U.S. Senate—Committee on Foreign Relations		11,594		27,846		39,440
Justice—Watergate Special Prosecution Force		5,184		7,020		12,204
Law Library				4,329		4,329
Processing Department:						
Technical Processes Research Office	5.0	119,189	10,727			129,916
MARC Editorial Office	66.0	832,464	74,922			907,386
MARC Development Office	57.0	1,155,820	104,024	[2] 564,297	37,800	1,861,941
National serials data program	16.0	207,817	18,703			226,520
Catalog distribution service	21.0	309,514	27,856	626,836		964,206
Serial Record Division—NSF—develop an automated national data base for serials	6.0	78,426	7,145	3,400	4,861	93,832
Serial Record Division—NEH—national serials data base in humanities	14.0	200,057	18,006	26,480	4,000	248,543
Council on Library Resources—COMARC pilot project	2.0	4,374	394			4,768
National Commission on Libraries and Information Science—library network development					52,000	52,000

Organization	Man-years	Salaries and compensation	Personnel benefits	Equipment rental [1]	Other services	Total
Reference Department:						
Prints and Photographs Division—NEH—National film collection catalog	6.0	74,173	5,423	10,813	407	90,816
Division for the blind and physically handicapped	12.5	134,344	12,091	[2] 157,077	.....	303,512
Science and Technology Division—Department of the Army—CRREL	4.5	77,900	7,011	650	6,840	92,401
Science and Technology Division—NSF—antarctic bibliography	4.5	76,909	6,922	650	6,750	91,231
Copyright Office	112.0	1,502,175	135,196	259,734	.....	1,897,105
Congressional research service	83.7	1,138,030	102,423	[3] 466,058	424,620	2,131,131
Total	494.2	7,460,657	668,785	4,568,097	916,778	13,734,317

[1] Does not include any equipment purchases or depreciation on purchased equipment.
[2] Amounts shown are totals, by Department, for computer rentals paid out of salaries and expenses, Library of Congress. Division breakdowns are not readily available.
[3] Amount shown for Congressional research service includes rental of equipment paid out of salaries and expenses, Library of Congress, appropriation.

TABLE G4.—LIBRARY OF CONGRESS, CONGRESSIONAL RESEARCH SERVICE

AUTOMATED ACTIVITIES, FY 1976 (EST.)

	Staff years	Salaries and compensation	Personnel benefits	Equipment rental	Other services	Total
Organizational units/activities:						
Information systems group	8.0	$131,791	$11,861	.....	.....	$143,652
Issue briefs unit	10.5	156,135	14,052	$30,000	$6,500	206,687
Digest of public general bills/bill abstract factual statements/MLC	34.0	[1] 394,823	35,534	.....	150,000	580,357
SDI, on demand bibliographies and searches, research support	22.5	[2] 292,656	26,335	15,000	21,500	355,495
Information sciences group	3.0	68,534	6,168	.....	.....	74,702
Data bases:						
Juris	1.0	23,794	2,142	5,000	.....	30,936
New York Times	2.0	28,322	2,549	16,500	139,120	186,491
DRI	1.0	15,481	1,393	2,160	50,000	69,034
Cyphernetics, Inc., Chase	.....	.....	.....	.....	15,000	15,000
Boeing Computer Services, Wharton	.....	.....	.....	.....	15,000	15,000
Computer Services Corp., Edstat	.2	3,096	279	.....	4,000	7,375
Computer Services Corp	.6	12,565	1,131	.....	21,000	34,696
Education model	.2	7,737	697	.....	.....	8,434
Tymshare (Department of Commerce):						
Medline	.1	1,548	139	.....	1,000	2,687
Toxline	.1	1,548	139	.....	1,500	3,187
Total	83.7	1,138,030	102,423	68,660	424,620	1,733,733

[1] Includes cost of personnel who perform bill digesting and abstracting functions.
[2] Includes cost of personnel who select and prepare entries for the bibliographic data base and the cost of reproducing the articles in response to requests for hard copy.

APPENDIX H

CONGRESSIONAL RESEARCH SERVICE WORKLOAD STATISTICS

TABLE H1.—CRS APPROPRIATIONS AND BUDGETED POSITIONS, FISCAL YEARS 1971–76

	Appropriation	Budgeted positions
Fiscal year:		
1971	$5,653,000	363
1972	7,238,000	438
1973	9,155,000	524
1974	11,391,000	618
1975	13,767,000	703
1976	16,606,000	778

TABLE H2.—NUMBER OF INQUIRIES CLEARED BY SOURCE, FISCAL YEAR, 1971, 1973, 1975

	Member	Committee	Constituent	Total
Fiscal year:				
1971	89,954	15,257	75,518	180,729
1973	99,244	21,421	60,399	181,063
1975	142,607	34,212	67,679	244,498

TABLE H3.—PERCENTAGE OF TIME CRS SPENT ON MEMBER, COMMITTEE, AND CONSTITUENT REQUESTS, FISCAL YEARS 1971, 1973, 1975

	Member	Committee	Constituent	Total
Fiscal year:				
1971	60.7	23.1	16.2	100
1973	52.2	33.0	14.8	100
1975	52.1	36.6	11.3	100

APPENDIX I

RECENT CONTRACTUAL ARRANGEMENTS

Department and contractor	Product or service	Amount	Source of funds
ISO:			
Richard L. Deal & Associates	Findings and recommendations for implementation of a telecommunications control and test facility for use with the Library of Congress computer system.	$12,488	LC, fiscal year 1976.
Irving J. Kuperman (Technology Management, Inc.)	Performance of systems analysis and recommendations concerning the implementation of hardware/software systems design to monitor and control outside access to LC data bases.	9,984	LC, fiscal year 1976.
U.S. Navy Printing and Publications Office	Produces test and production runs of microforms for various offices within the Library of Congress.	5,000	LC, fiscal year 1976.
System Development Corp	ORBIT data base search service provides reference librarians in the Science and Technology Division of the Reference Department with on-line access to the ERIC, NTIS, Compendex, SciSearch, Chemcon, and Georef data bases. Searches of these data bases are conducted as part of a pilot evaluation method of extending reference services by the Science and Technology Division.	1,000	LC, fiscal year 1976.
IBM	IBM OS/VSI and associated computer programs	(1)	LC, fiscal year 1976.
IBM	IBM Customer Information Control System (CICS)	18,816	LC, fiscal year 1976.
IBM	IBM Display Management System (DMS)	4,800	LC, fiscal year 1976.
American Information Services	DAP/MON Program	(1)	LC, fiscal year 1975.
IBM	IBM Administrative Terminal System (ATS)	(1)	
IBM	IBM Learn ATS	516	LC, fiscal year 1976.
IBM	ANS COBOL Compiler (IBM)	(1)	
Capex Corp	Capex Optimizer II	1,080	LC, fiscal year 1976.
IBM	IBM PL/I Optimizing Compiler	6,480	LC, fiscal year 1976.
Boole & Babbage Corp	Boole & Babbage Configuration Utilization Evaluator (CUE)	1,165	LC, fiscal year 1976.
Boole & Babbage Corp	Boole & Babbage Problem Program Evaluator (PPE)	1,165	LC, fiscal year 1976.
Pace Computing Corp	Pace KOMAND Data Acquisition System (KOMAND-DAS)	1,080	LC, fiscal year 1976.
Innovation Data Processing, Inc	Innovation Data Processing Fast Dump Restore (FDR)	4,600	LC, fiscal year 1976.
IBM	IBM Sort/Merge 1 (SM1)	1,584	LC, fiscal year 1976.
Informatics, Inc	Informatics MARK IV	1,375	LC, fiscal year 1976.

Processing:			
Philip Long, consultant	Study of hardware and software requirements for the Core Bibliographic System	6,500	Council on Library Resources, fiscal year 1975.
Lawrence Buckland Inforonics, Inc	Study of the role of LC in the emerging national bibliographic network	20,000	National Commission on Libraries and Information Science, fiscal year 1976. Part of a $52,000 grant.
Brett Butler Associates	Pilot study to test the receptiveness of the library community to the use of microforms in a technical processing environment.	18,300	LC, fiscal year 1974.
David Weisbrod, consultant	Study leading to the development of a reporting format for libraries to submit machine-readable records to the "National Union Catalog."	5,000	Council on Library Resources, fiscal year 1975.
Washington State Library	Write a print program whose output could be fed into a line printer or a COM (computer output microfilm) device.	5,000	LC, fiscal year 1975.
OCR Input Services	Records input to the automated system for the "Register of Additional Locations"	[4] 24	LC, fiscal year 1974 and fiscal year 1975.
Gerald Swanson, consultant	Upgrading of a statistical program which performs an analysis of the inARC tapes	3,500	LC, fiscal year 1975.
Reference:			
The Mitre Corp	Spanish Braille Project	3,532	LC, fiscal year 1975.
Electronic Keyboarding, Inc	Retrospective Cataloging Project	37,286	LC, fiscal year 1975.
CRS:			
Applied Urbanetics, Inc	Modifications to Federal Educational Finance Model	11,074	CRS, fiscal year 1975.
Mathematica, Inc	Evaluation of VA computer model and recommend methodology for predicting future pension recipients.	1,800	CRS, fiscal year 1975.
International Research and Technology	An analysis of certain characteristics of selected computer simulation models	1,950	CRS, fiscal year 1975.

[1] Part of CPU cost.
[2] One time charge, fiscal year 1975.
[3] No charge.
[4] Per 1,000 records.

APPENDIX J

COMPUTER EQUIPMENT AND SOFTWARE VENDORS SUPPORTING THE LIBRARY

Vendor	*Item(s) supplied*
Anderson-Jacobson, Inc.	Typewriter terminals
BASF Corporation	Disk packs
Bell & Howell	Optical Reader terminal
Boole & Babbage Corporation	Computer system measurement software
C&P Telephone Company	Telephone lines and modems
CAPEX Corporation	Software optimizer
Comten Corporation	Communications controllers
Delta Data Corporation	Cathode ray tube (CRT) terminals
Four Phase Corporation	CRT terminals
General Electric Corporation	Printer terminals
GENESIS One Corporation	Collator and sorter
Harris Communications Systems	Typewriter terminals
Hazeltine Corporation	CRT terminals
IBM Corporation	Central processors, printers, disks, and typewriter terminals
Informatics, Inc.	File management software
Information Consultants, Inc.	Budget preparation software
ITEL Corporation	Disk drives
Memorex Corporation	Disk packs
Mohawk Data Sciences Corporation	Remote job entry (RJE) terminal
Nashua Corporation	Disk packs
NCR Corporation	Keyboard/printer terminals
Optical Scanning Corporation	CRT terminals
Pace Computing Corporation	Systems accounting software
Storage Technology Corporation (STC)	Tape drives
SYCOR Incorporated	CRT terminals
System Development Corporation	Data base search service
Univac Division, Sperry Rand Corp.	Keypunch equipment
Zeta Corporation	Printer terminals

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